Chapter 3
Affected Environment

3.0 Introduction

This chapter describes the environment that may be affected by the proposed action. As described in Chapter 1, Purpose and Need for the Federal Action, the proposed action considered in this Supplemental Draft EIS is the U.S. Fish and Wildlife Service's (Service) response to the application for an incidental take permit (ITP) submitted by Tejon Ranchcorp (TRC) for the Covered Activities associated with the Tehachapi Uplands Multiple Species Habitat Conservation Plan (TU MSHCP). Eight resource areas are described in the individual sections of this chapter: biological resources, water resources, air quality, geology and soils, cultural resources, visual resources, community resources, transportation, and climate change and greenhouse gases. Each section includes a summary of the sources of information used to describe the affected environment and a detailed description of resources in the study area. This information forms the basis for the description of potential effects provided in Chapter 4, Environmental Consequences.

3.0.1 Covered Lands and Study Area

As described in Section 2.1.1, Location of Alternatives, the area covered by the alternatives considered in this Supplemental Draft EIS, including the Proposed TU MSHCP Alternative, is referred to as the Covered Lands. The Covered Lands encompass 141,886 acres of the 270,365-acre Tejon Ranch (ranch), located approximately 60 miles north of Los Angeles and 30 miles south of Bakersfield, California (Figure 2-1). The Covered Lands generally constitute the Tehachapi Uplands of the ranch, which is roughly above 2,000 feet above mean sea level (amsl) on the north (San Joaquin Valley) side of the mountains and 3,500 feet amsl on the south (Antelope Valley) side. The Covered Lands reflect the area where activities associated with the alternatives considered in this Supplemental Draft EIS would be implemented.

The study area, as the term is used in this chapter, represents the area considered in characterizing the affected environment, and varies by resource topic. In some cases, the study area is the same as the Covered Lands. For other resource areas, the study area extends beyond the boundary of the Covered Lands to account for potential effects on resources affected by the Covered Activities. For example, the study area for the air quality section encompasses the entire airshed where the proposed action would occur. For resource topics that require evaluation of a study area that is different from the Covered Lands, a description of that study area is provided in the introduction to that section.

3.1 Biological Resources

This section describes the existing biological resources and associated abiotic resources in the study area. For this section, the study area is considered concurrent with the Covered Lands, although the habitat and distribution (e.g., range) of each species is also discussed, as appropriate. Additional detail on biological resources are provided in Appendix D, Habitat Suitability Criteria Methods, and Appendix E, Covered Species Survey Methods, as well as the TU MSHCP (Dudek 2011).

3.1.1 Topography, Geology, and Soils

3.1.1.1 Topography and Geology

Based on landform, Tejon Ranch (the ranch) can be divided into two major sections: the Tehachapi Mountain and the Tunis/Winters Ridge areas, which together are referred to as the Tehachapi Uplands and encompass the majority of the ranch; and the San Joaquin Valley (Kern County) and Antelope Valley (Los Angeles County) floors (Figure 1-1). The Tehachapi Uplands are defined as the area of the ranch generally 2,000 feet above mean sea level (amsl) on the north (San Joaquin Valley) side of the mountains and generally above 3,500 feet amsl on the south (Antelope Valley) side, but excluding the Tunis/Winters Ridge area. Maximum elevation of the Tehachapi Uplands is approximately 7,000 feet amsl. The Tunis/Winters Ridge area is defined as the area between 2,000 feet amsl from the San Joaquin Valley Floor and the overlooking ridgelines between Pastoria Creek on the west and El Paso Creek on the east.

Geology influences biological resources in a variety of ways. For example, geologic formations and fault zones determine rates of sedimentation within streams, affecting suitability for aquatic wildlife. Resistance to weathering often results in cliff and rock outcrop formations that provide nesting locations for certain raptor species, and caves and crevices that provide nesting sites for other birds and denning sites for mammals. Plant species may be adapted to highly local mineral composition, resulting in endemism.

Within the Tehachapi Uplands, Mesozoic granitic rocks predominate (U.S. Department of Agriculture 1997). Other formations in the region include prebatholith metamorphic rocks; Eocene, Oligocene, and Miocene sedimentary rocks; and in the Castac Valley, Quaternary alluvium. The geologic setting of the Tehachapi Uplands was most recently reported by ENGEO (2008). The following summarizes ENGEO's report and identifies geologic formations and processes that may influence biological resources.

The study area is characterized by the intersection of two major fault systems: the San Andreas Fault, running north to south as close as 2 miles from the southwestern boundary, and the Garlock Fault, running in a northeasterly to southwesterly direction through the panhandle and south-central portion of the study area before terminating at the San Andreas Fault. Although the Garlock Fault has not produced earthquakes historically, there is abundant evidence of prehistoric earthquakes, including activity in the last 11,000 years. Numerous other fault zones subsidiary to the San Andreas and Garlock faults occur in the study area, although none show evidence of activity during the last 11,000 years (ENGEO 2008).

South of the Garlock Fault, the principal rock type is Tejon Lookout granite, a medium- to coarse-grained gray and salmon-colored biotite granite. North of Geghus Ridge, the most common rock type is Lebec quartz monzonite. This formation is characterized by rounded hills and steep slopes and is highly erodible. Pelona schist, a metamorphic rock, is also present in the Geghus Ridge area. The Pelona schist rock formation is characterized by rounded hills and gently rolling ridge tops (ENGEO 2008).

The northwestern part of the study area contains School Canyon granite, which is similar to Tejon Lookout granite but is more resistant to weathering and therefore forms jagged rock outcrops, as seen from Rising Canyon. The most common rock type in the north-central portions of the site is hornblende diorite. This rock color and formation has been altered in many places by movement along Pastoria Thrust and Garlock Fault. The geology in the southern part of the study area contains a portion of a larger limestone formation. This limestone is a metamorphosed type with lesser components of hornfels, schist, and quartzite. The limestone formation is relatively resistant to weathering and thus forms outcrops and cliffs (ENGEO 2008).

Metasedimentary rock types, including hornfels and schists, marble, and quartzites, are sporadically distributed in small areas relatively near the Garlock Fault. The north-central part of the site is underlain by silicified andesite, a volcanic type intruding the Lebec quartz monzonite and metamorphosed limestone.

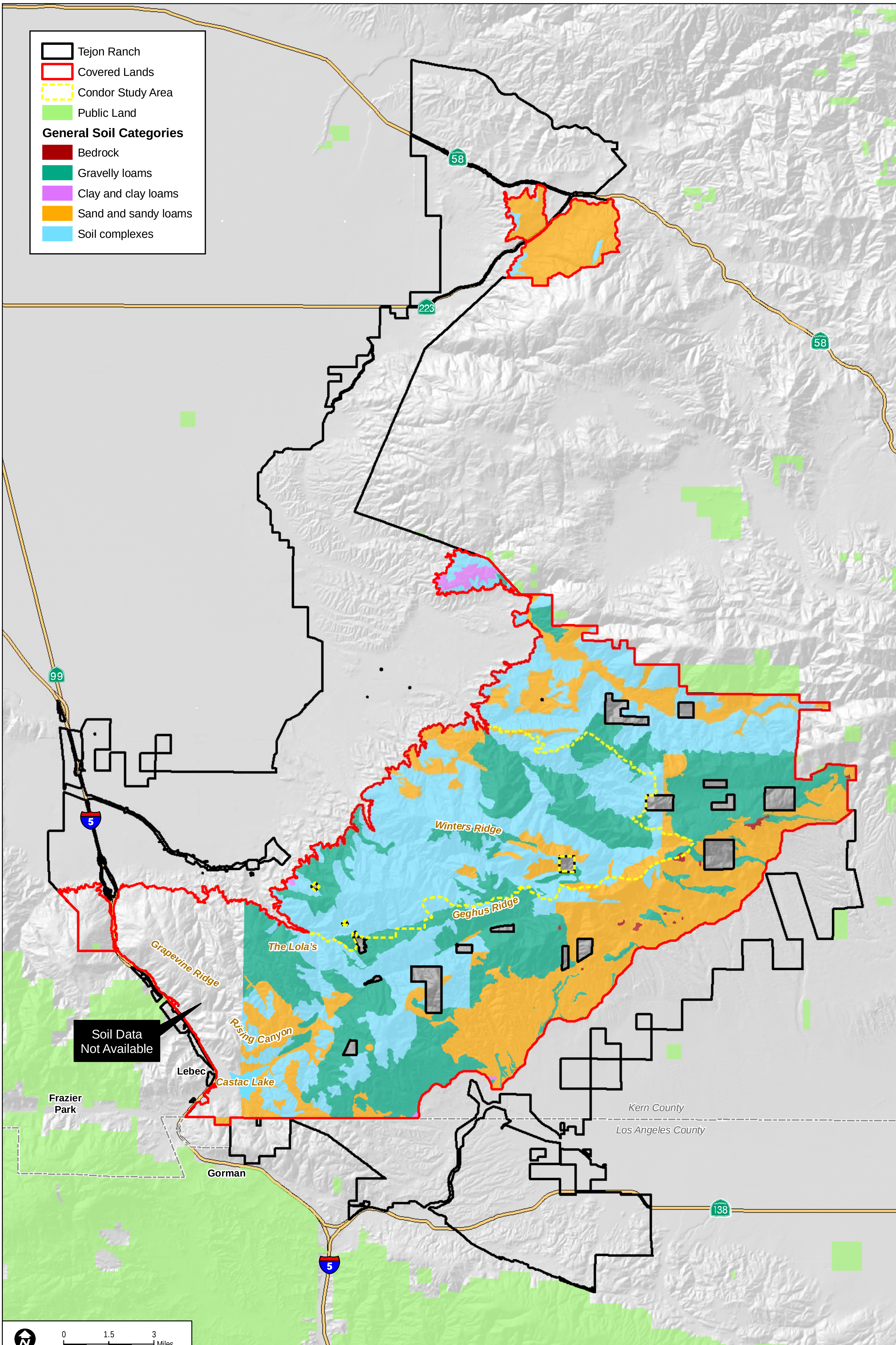
With regard to sediment layers, younger (Holocene-age) alluvium, colluvium, and debris flows are common within Castac Valley as well as larger canyons, such as Crane Canyon and Bear Trap Canyon. Older (Pleistocene-age) alluvium, colluvium, and debris flows are present on the highest ridge tops.

3.1.1.2 Soils

Soils data are from the Soil Survey Geographic (SURGO) database, which is the most detailed level of soil geographic data developed by the National Cooperative Soil Survey (U.S. Department of Agriculture 1999). The soils data are limited in their extent in the study area and do not include roughly the western quarter of the study area (Figure 3.1-1). The 66 soil types mapped in the study area are generalized into five general categories: bedrock, gravelly loams, clay and clay loams, sand and sandy loams, and soil complexes. As shown in Figure 3.1-1, the dominant categories are gravelly loams, soil complexes, and sand and sandy loams. There is relatively little clay and clay loams, which may be a limiting factor for the occurrence of many special-status plant species that have clay soil requirements. The gravelly loams tend to dominate the central portions of the study area, the soil complexes tend to dominate the northern portion, and the sand and sandy loams tend to dominate the southern portion, but all three general types occur throughout the study area.

3.1.2 Physiography

In addition to geology and soils, the physiography (i.e., physical geography) of the site informs the biological setting. The study area contains the diverse natural physical features of the Tehachapi Mountains landscape, including a 5,000-foot elevation range (approximately 2,000 feet to approximately 7,000 feet) and complex topography with numerous ridgelines and valleys. The study area includes major landforms such as Bear Trap Canyon, Tejon Canyon, Geghus Ridge, and Winters Ridge and high peaks such as Grapevine Peak (4,750 feet), the ridge south of Lopez Flats (6,500 feet), Diorite (6,674 feet), Liebre Twins (6,413 feet), and Middle Ridge (5,400 to 5,900 feet). The



SOURCE: California Department of Conservation 2007
California Resource Agency 2011
TRC 2007

FIGURE 3.1-1
Covered Lands Soils Map

northern portion of the study area lies on the slopes of Bear Mountain (6,934 feet at the peak, located outside the study area). The lower elevations support mostly scrub and chaparral on the southern slopes and grasslands and savannah on the northern slopes and in the interior valleys. The upper elevations to 7,000 feet support woodlands and conifer forests. The complex topography provides for various microclimates, including more mesic conditions on north-facing slopes and more xeric conditions on south-facing slopes.

The study area has a complex hydrologic system with four drainage areas that are part of the Grapevine Hydrologic Unit: Castac Lake, Grapevine Creek, Tehachapi Mountains, and Pastoria Creek. The Castac Lake drainage area occupies over 38,000 acres, extending west along Cuddy Creek through the communities of Piñon Pine Estates, Cuddy Valley, Lake of the Woods, and Frazier Park, as well as the Los Padres National Forest. North of Castac Lake, drainage flows from the lake into the Grapevine drainage area. The main stream through the area is Grapevine Creek, which parallels Interstate 5 (I-5). The western portion of the drainage area, which is mainly off site, receives flows from O'Neil Creek. The eastern portion receives flows from Rising Canyon and two unnamed tributaries north of Rising Canyon. The Tehachapi Mountains drain northward and includes Monroe Creek, Silver Creek, Squirrel Creek, and many other smaller drainages extending eastward immediately north of Geghus Ridge. Bear Trap Canyon, Palos Altos Creek, and Pastoria Creek are included in the Pastoria Creek drainage area. The hydrology of the study area is discussed further in Section 3.2, Water Resources.

The varied geology, soils, and watersheds of the study area, combined with the different microclimates and microhabitats, including a large open water element (Castac Lake) associated with these physiographic features, promotes a large richness and diversity of plant and animals species. Within the TMV Planning Area alone (20% of the area within the Covered Lands), a total of 1,068 species of vascular plants have been recorded during on-site surveys conducted between 2003 and 2007, of which 885 (83%) were native species and 126 (12%) were nonnative introduced species (Dudek 2009), as further discussed in Section 3.1.3, Vegetation Communities. Further, almost 450 wildlife species have been observed or detected during the various wildlife surveys of the TMV Planning Area, as discussed in Section 3.1.4, Wildlife Associated with Vegetation Communities.

3.1.3 Vegetation Communities

3.1.3.1 Mapping Methods

As described below, two data sources were combined to create the general vegetation database and map for the study area (Figure 3.1-2): the Tejon ranchwide vegetation composite data layer, and the vegetation map created for the TMV Planning Area during site-specific studies in 2007.

The Tejon Ranchwide Vegetation Composite Data Layer

The Tejon ranchwide vegetation composite data layer was based on several surveys conducted on the ranch between 1980 and 1994, and was subsequently updated in fall 2007 to reflect changes in the extent of mining activity in the south-central portion of the study area. Additional vegetation mapping was conducted using a 1-meter-pixel-size aerial image flown in May 2000 to fill in gaps in vegetation mapping data. The Tejon ranchwide vegetation composite primarily reflects the classification system outlined in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). However, some mapped vegetation communities reflect more general mapping comparable to general habitat types (e.g., riparian forest and woodland) outlined in the 2003 *List of California Terrestrial Natural Communities* (California Department of Fish and Game 2003).

The Tejon ranchwide vegetation composite data layer is limited by the timeframe for when the data were assembled, as well as the precision of the data. The Tejon ranchwide vegetation composite data layer represents conditions at the time the data were assembled, in this case from 1980 to 1994, 2000, and 2007. The current extent and character of vegetation communities represented in the Tejon ranchwide vegetation composite data may therefore differ somewhat from those depicted in the study area vegetation map (Figure 3.1-2).

Vegetation Mapping of TMV Planning Area

The vegetation mapping conducted in 2007 in the TMV Planning Area used a 2006, 1-foot-pixel-size ortho-rectified aerial image (AirPhotoUSA 2006). Vegetation mapping followed the classification scheme outlined in the *List of California Terrestrial Natural Communities* (California Department of Fish and Game 2003). Minimum mapping units were established at 2.2 acres (1 hectare) for communities not considered to be high priority for inventory in the *List of California Terrestrial Natural Communities* and 1 acre for communities that were considered high priority for inventory.

The vegetation mapping conducted in 2007 is limited because it does not cover the entire extent of the study area (it only covered the TMV Planning Area). However, the mapping provides a greater level of precision in the TMV Planning Area than the Tejon ranchwide vegetation composite data layer and is intended to facilitate the assessment of landscape-level effects on species within the portion of the study area that it covered.

Vegetation Crosswalk

To prepare a comprehensive vegetation layer for the study area, a "crosswalk" was created between the vegetation communities used in the Tejon ranchwide vegetation composite data layer and the 2007 vegetation mapping of the TMV Planning Area (Appendix D). The crosswalk was necessary because the two vegetation data layers used different classification systems and the habitat suitability analysis required a vegetation data layer consisting of a uniform classification system. The crosswalk was applied to the 2007 vegetation layer for the Tehachapi Uplands so that the vegetation classification in this area was consistent with the classification system used for the Tejon ranchwide vegetation composite, which addressed all of the study area. The classification system for the Tejon ranchwide vegetation composite is used in the analysis presented in Section 3.1.3.2, Vegetation Communities.

3.1.3.2 Vegetation Communities

Table 3.1-1 presents a summary of the vegetation communities in the study area, as provided in the Tejon ranchwide vegetation composite data layer (Section 3.1.3.1, Mapping Methods). The specific vegetation communities are listed and subtotaled for each general vegetation type (e.g., scrubs, chaparrals). The general vegetation map is shown in Figure 3.1-2.

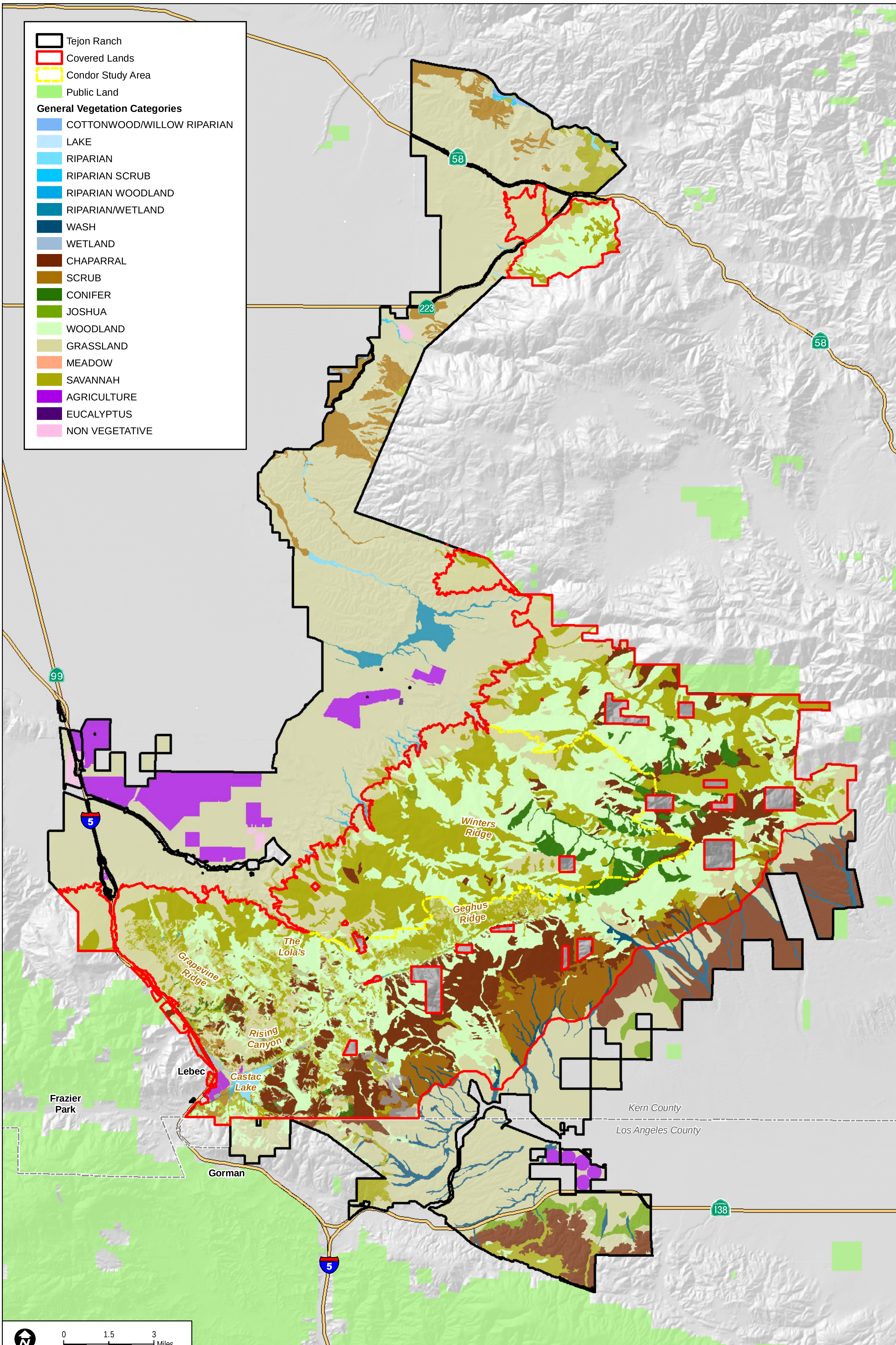


FIGURE 3.1-2

Covered Lands Vegetation Map

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Table 3.1-1. General Vegetation Communities in the Study Area

Vegetation Type	Acres in Study Area[1]	Percentage of Study Area
Scrubs		
Alluvial scrub	36	< 1
Mojavean scrub	6,951	5.1
Saltbush/buckwheat scrub	290	< 1
Scrub	564	< 1
Total Scrubs	*7,841*	*5.8*
Chaparrals		
Brewer's oak scrub	2,720	2.0
Chaparral	11,050	8.2
Scrub oak	641	< 1
Undetermined chaparral	4	< 1
Total Chaparrals	*14,415*	*10.7*
Grasslands		
Disturbed/nonnative grassland	6,411	4.8
Grassland	17,387	12.9
Native grassland	1,146	< 1
Total Grasslands	*24,944*	*18.5*
Savannahs		
Black oak savannah	29	< 1
Blue oak savannah	5,114	3.8
Canyon oak savannah	432	< 1
Gray pine savannah	64	< 1
Interior oak savannah	276	< 1
Mixed oak savannah	11,997	8.9
Valley oak savannah	5,603	4.2
Undetermined savannah	678	< 1
White oak savannah	8,927	6.6
Total Savannahs	*33,120*	*24.5*
Woodland		
Black oak woodland	2,701	2.0
Blue oak woodland	9,089	6.7
California buckeye woodland	338	< 1
Canyon oak woodland	6,193	4.6
Gray pine woodland	109	< 1
Black oak/valley oak woodland	761	< 1
Mixed oak woodland	28,086	20.8
Oak woodland	147	< 1
Pinyon pine woodland	285	< 1
Undetermined woodland	153	< 1
White oak woodland	874	< 1
Total Woodland	*48,736*	*36.1*

Vegetation Type	Acres in Study Area[1]	Percentage of Study Area
Conifers		
Conifer/mixed oak	912	< 1
Incense-cedar stand	4	< 1
Intermixed conifer	1,059	< 1
White fir stand	320	< 1
White fir/mixed oak	1,661	1.2
Total Conifer Forest	*3,956*	*2.9*
Riparian/Wetland		
Riparian scrub	76	< 1
Riparian/wetland	10	< 1
Wetland	281	< 1
Lake	336	< 1
Total Riparian/Wetland	*703*	*< 1*
Riparian Woodland		
Riparian woodland	43	< 1
Oak riparian	16	< 1
Total Riparian Woodland	*59*	*< 1*
Wash		
Desert wash/riparian/seeps	841	< 1
Wash	22	< 1
Total Wash	*863*	*< 1*
Nonnative Land Covers		
Agriculture	232	< 1
Developed	127	< 1
Total Nonnative Land Covers	*1,027*	*< 1*
Total	**134,996**	**100**

Notes:

[1] Acreages are based on the study area encompassing 134,996 acres, or the total study area (141,886 acres) less the acreage in Other Lands (6,890 acres) (i.e., Not-A-Part Inholdings [i.e., lands owned by other entities, including California Department of Water Resources (DWR) and private entities] and areas where existing uses not covered under the TU MSHCP [i.e., mineral extraction and cemetery uses] would occur).

The predominant general vegetation community in the study area is woodland (defined as areas with greater than 40% cover and includes open woodland at 40 to 70% cover and woodland at greater than 70% cover), which accounts for approximately 36% of the total vegetation cover in the study area. The woodlands represent several types of oak woodlands that are characterized by the dominant species in the classification, including black oak (*Quercus kelloggii*), blue oak (*Quercus douglasii*), canyon oak (*Quercus chrysolepis*), interior live oak (*Quercus wislizeni*), white oak (a mix of blue oak and valley oak [*Quercus lobata*]), and mixed oak (a mix of blue oak, black oak, canyon oak, interior live oak, white oak, and gray pine [*Pinus sabiniana*]). Other woodland types include California buckeye (*Aesculus californica*), gray pine, and pinyon pine (*Pinus monophylla*) that account for much smaller areas of the study area.

Savannah (less than 40% cover of trees) is the secondary dominant vegetation community, which accounts for approximately 25% of the total coverage in the study area. Similar to the woodlands, the savannahs are of several types, including black oak, blue oak, canyon oak, interior live oak, mixed oak, white oak, and gray pine. Mixed oak savannah accounts for the largest component (36%) of the savannah vegetation, followed by white oak savannah (27%) and blue oak savannah (15%). The oak woodlands and savannahs are broadly distributed throughout the study area. The oak communities on Geghus Ridge and Grapevine Ridge support large, mature to deceased scattered valley oak trees that are the only trees present. These unique valley oak communities in particular provide important habitat for wildlife, particularly for cavity-nesting birds such as purple martin (*Progne subis*).

Grasslands account for about 19% of the general vegetation communities in the study area. Of the grasslands, approximately 70% are mapped as annual grassland composed mostly of nonnative species, 25% are mapped as disturbed/nonnative grassland, and 4% are mapped as native grassland. The annual grassland species include soft chess (*Bromus tectorum*), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), and oats (*Avena* spp.). Forbs that frequently occur in the annual grasslands include common lomatium (*Lomatium utriculatum*), miner's lettuce (*Claytonia perfoliata*), mountain violet (*Viola purpurea*), California poppy (*Eschscholzia californica*), and common madia (*Madia elegans*). Native grasslands include as dominant species one-sided bluegrass (*Poa secunda*), creeping ryegrass (*Leymus triticoides*), and purple needlegrass (*Nassella pulchra*). Grasslands are concentrated along the lower slopes of the northern and western portions of the study area in close association with savannah and otherwise scattered throughout the remainder of the study area in smaller patches.

Scrub and chaparral combined total approximately 17% of the study area, with chaparral about twice as prevalent as scrub. The dominant chaparral is mapped as a general chaparral (77%), with smaller amounts of Brewer's oak (*Quercus garryana* var. *breweri*) scrub chaparral (18%) and scrub oak (*Quercus berberidifolia*) chaparral (4%). Chaparral is concentrated in the southern portion of the study area, with smaller patches at the higher elevations. The scrub vegetation is composed primarily of Mojavean scrub (89%), which is limited to the southern edge of the study area, with smaller amounts of coastal scrub (7%), saltbush/buckwheat scrub (4%), and alluvial scrub (less than 1%).

The conifer communities account for about 3% of the general vegetation communities in the study area and primarily occur at the higher elevations in the eastern portion of the study area. The conifer communities are co-dominated by white fir/mixed oak (42%) and intermixed conifer (oak is a primary constituent and conifer a secondary constituent) (27%), with the remainder of the community composed of conifer/mixed oak (23%), white fir (8%), and incense-cedar (<1%).

Riparian/wetland, riparian woodland, and wash communities are a relatively small component of the vegetation communities in the study area, accounting for just over 1% of the total cover. Of these communities, wash is the largest component at 53%, with riparian/wetland habitats (excluding Castac Lake) composing 22% of the total and riparian woodland habitats composing about 4% of the total. Castac Lake composes about 21% of the total.

While the vast majority of the study area supports natural vegetation communities, nonnative developed areas account for about 127 acres, or less than 1% of the total study area. Similarly, 232 acres (less than 1% of the study area) of the study area are in agricultural production.

3.1.4 Wildlife Associated with Vegetation Communities

Extensive wildlife surveys conducted within the TMV Planning Area over the past decade identified a total of 448 wildlife species, including 178 invertebrates (including 20 butterflies and moths), 5 amphibians, 17 reptiles, 4 fish, 199 birds, and 45 mammals (Compliance Biology 2003, Bruyea Biological Consulting 2003, Impact Sciences 2004, Vollmar Consulting 2004, Jones & Stokes Associates 2006, Dudek 2007a, 2007b). Representative bird, mammal, and reptile species occurring in the different vegetation communities of the study area are listed in Table 3.1-2.

3.1.4.1 Woodland and Savannah Species

Woodlands and savannahs, which account for approximately 61% of the study area, provide important breeding and foraging habitat for a variety of species, and particularly birds. Acorns are an important food source for several common bird species, including acorn woodpecker (*Melanerpes formicivorus*), western scrub-jay (*Aphelocoma californica*), and oak titmouse (*Baeolophus inornatus*). Caching of acorns by scrub-jays promotes oak regeneration and recruitment. Woodland and savannahs and associated understory shrubs and herbaceous vegetation also provide other food resources for native species, including arthropods, fruits, and seeds. Most of the birds associated with woodlands and savannahs use the trees for roosting, perching, refuge, or nesting. Nesting cavities and snags in woodlands and savannahs are particularly important for acorn woodpecker, oak titmouse, and western bluebird (*Sialia mexicana*), as well as the special-status purple martin. Mammals such as mule deer (*Odocoileus hemionus*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and common raccoon (*Procyon lotor*) use woodland and savannah for cover, refuge, forage, and movement. Western gray squirrels (*Sciurus griseus*) rely on woodlands for cover and nesting cavities, and acorns as an important food source. The understory of woodlands and savannahs provides herbaceous and leaf-litter cover and food resources for a variety of small species, including various mice and reptile species.

Table 3.1-2. Representative Wildlife Observed in the Study Area

	Vegetation Community Association				
Species Common Name (Scientific Name)	Woodland and Savannah	Grassland	Scrub and Chaparral	Conifer	Riparian, Wetland or Open Water
Birds					
Mourning dove (*Zenaida macroura*)	x				
Western scrub-jay (*Aphelocoma californica*)	x				
Western bluebird (*Sialia mexicana*)	x				
Oak titmouse (*Baeolophus inornatus*)	x				
Acorn woodpecker (*Melanerpes formicivorus*)	x				
Northern flicker (*Colaptes auratus*)	x				
Bushtit (*Psaltriparus minimus*)	x		x		
Yellow-rumped warbler (*Setophaga [Dendroica] coronata*)	x				
Red-tailed hawk (*Buteo jamaicensis*)	x	x			
Red-shouldered hawk (*Buteo lineatus*)	x				
American kestrel (*Falco sparverius*)	x	x			
Bewick's wren (*Thryomanes bewickii*)	x		x		
Horned lark (*Eremophila alpestris*)		x			
Western meadowlark (*Sturnella neglecta*)		x			
Lark sparrow (*Chondestes grammacus*)	x	x			
Savannah sparrow (*Passerculus sandwichensis*)		x			
Prairie falcon (*Falco mexicanus*)		x			
Barn owl (*Tyto alba*)		x			
California quail (*Callipepla californica*)			x		
California thrasher (*Toxostoma redivivum*)			x		
California towhee (*Pipilo crissalis*)			x		
Spotted towhee (*Pipilo maculatus*)			x		
Wrentit (*Chamaea fasciata*)			x		
Mountain quail (*Oreortyx pictus*)				x	
Steller's jay (*Cyanocitta stelleri*)				x	
Mountain chickadee (*Poecile gambeli*)				x	
Herons and egrets (*Ardeidae*)					x
Black phoebe (*Sayornis nigricans*)					x
House wren (*Troglodytes aedon*)					x
Marsh wren (*Cistothorus palustris*)					x
Thrush (*Catharus* spp.)					x
Common yellowthroat (*Geothlypis trichas*)					x
Wilson's warbler (*Wilsonia pusilla*)					x
Song sparrow (*Melospiza melodia*)					x

Species Common Name (Scientific Name)	Vegetation Community Association				
	Woodland and Savannah	Grassland	Scrub and Chaparral	Conifer	Riparian, Wetland or Open Water
Red-winged blackbird (*Agelaius phoeniceus*)					x
Various grebes (*Podicipedidae*)					x
American white pelican (*Pelecanus erythrorhynchos*)					x
Double-crested cormorant (*Phalacrocorax auritus*)					x
Wood duck (*Aix sponsa*)					x
Pintails and teals (*Anas* spp.)					x
Mallard (*Anas platyrhynchos*)					x
Ruddy duck (*Oxyura jamaicensis*)					x
Various gulls (*Larus* spp.)					x
Mammals					
California ground squirrel (*Spermophilus beecheyi*)	x	x			
Western gray squirrel (*Sciurus griseus*)	x			x	
Botta's pocket gopher (*Thomomys bottae*)	x				
Brush rabbit (*Sylvilagus bachmani*)	x		x		x
Mice (*Peromyscus* spp., *Reithrodontomys megalotis, Chaetodipus californicus*)	x	x	x	x	
Woodrat (*Neotoma* spp.)	x		x	x	x
Mule deer (*Odocoileus hemionus*)	x			x	
Coyote (*Canis latrans*)	x	x	x	x	
Striped skunk (*Mephitis mephitis*)	x				x
Common raccoon (*Procyon lotor*)	x				x
Gray fox (*Urocyon cinereoargenteus*)	x		x	x	x
Bobcat (*Lynx rufus*)	x		x	x	x
Black-tailed jackrabbit (*Lepus californicus*)		x			
Desert cottontail (*Sylvilagus audubonii*)		x			
California vole (*Microtus californicus*)		x			
American badger (*Taxidea taxus*)		x			
Pacific kangaroo rat (*Dipodomys agilis*)			x		
Merriam's chipmunk (*Tamias merriami*)				x	
American black bear (*Ursus americanus*)				x	
Bats (*Vespertilionidae, Molossidae*)					x

Species Common Name (Scientific Name)	Vegetation Community Association: Woodland and Savannah	Grassland	Scrub and Chaparral	Conifer	Riparian, Wetland or Open Water
Reptiles and Amphibians					
Common kingsnake (*Lampropeltis getula*)	x	x	x	x	x
Western rattlesnake (*Crotalus oreganus*) (formerly *C. viridis*)	x	x	x	x	x
Coachwhip (*Coluber (Masticophis) flagellum*)	x	x	x	x	
Gophersnake (*Pituophis catenifer*)	x	x	x	x	
Western fence lizard (*Sceloporus occidentalis*)	x	x	x	x	
Common side-blotched lizard (*Uta stansburiana*)	x	x	x	x	
Baja California treefrog (*Pseudracris hypochondriaca*) (formerly called Pacific treefrog (*Hyla regilla*)					x
California toad (*Anaxyrus (Bufo) boreas*)					x

3.1.4.2 Grassland Species

Grasslands account for approximately 19% of the study area, of which about 95% is mapped as annual grassland dominated by nonnative grasses and disturbed/nonnative grasslands (Table 3.1-1). The annual grassland species were introduced from the Mediterranean basin and other Mediterranean climate regions and have naturalized in California in association with grazing and other agricultural practices, human disturbances such as disking, brushing or grading, and altered fire regimes. However, even nonnative grasslands provide important ecological functions as breeding and foraging habitat for some species. Two relatively common birds expected to nest in the grasslands in the study area are horned lark (*Eremophila alpestris*) and western meadowlark (*Sturnella neglecta*). Both native and nonnative grasslands are an important foraging resource for many raptors, because prey species, such as California ground squirrel (*Spermophilus beecheyi*), Bottta's pocket gopher (*Thomomys bottae*), and cottontail rabbits *(Sylvilagus audubonii*), are common and easily detected in grasslands. Several common and uncommon raptors forage in grasslands in the study area, including red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), prairie falcon (*Falco mexicanus*), and barn owl (*Tyto alba*). The grasslands are also important foraging habitat for the California condor (*Gymnogyps californianus*) and golden eagle (*Aquila chrysaetos*). Grasslands provide primary breeding habitat for species such as burrowing owl (*Athene cunicularia*) (a potential breeder in the study area) and American badger (*Taxidea taxus*), black-tailed jackrabbit (*Lepus californicus*), and small mammals such as deer mouse (*Peromyscus maniculatus*), western harvest mouse (*Reithrodontomys megalotis*), and California vole (*Microtus californicus*) (where grasslands are more dense). The smaller mammals are important prey for coyotes (*Canis latrans*). As with birds, grasslands support a small number of reptiles, including common side-blotched lizards (*Uta stansburiana*), which use rodent burrows, and snakes such as gophersnake (*Pituophis catenifer*), coachwhip (*Coluber (Masticophis) flagellum*), and western rattlesnake (*Crotalus oreganus*) (formerly *C. viridis*) that prey on the small mammals. Some amphibians, such as western spadefoot (*Spea hammondii*), also may hibernate in grassland that are close to aquatic breeding sites (i.e., vernal pools and stock ponds).

3.1.4.3 Scrub and Chaparral Species

Scrub and chaparral combined total approximately 17% of the study area, with chaparral about twice as prevalent as scrub. Scrub and chaparral communities exhibit a high level of floristic variation and diversity in California in relation to regional climate differences, topography (slope and aspect), soils and nutrients, and disturbance regimes, such a fire and human-related effects, including grazing and clearing. Because of variations in natural physical and disturbance factors, scrubs and chaparrals are patchily distributed in California in a mosaic with other vegetation communities, primarily woodlands and grasslands.

As summarized in Table 3.1-1, there are several scrub and chaparral types in the study area, primarily in the southern portion (Figure 3.1-2). Scrub and chaparral provide habitat for a rich diversity of wildlife species, including breeding habitat for a large number of year-round resident species that typically are only found in these communities, including California thrasher (*Toxostoma redivivum*), wrentit (*Chamaea fasciata*), California towhee (*Pipilo crissalis*), and spotted towhee (*Pipilo maculatus*). Certain small mammals are also fairly exclusive to scrub and chaparral habitats, including woodrats (*Neotoma* spp.), Pacific kangaroo rat (*Dipodomys agilis*), brush mouse (*Peromyscus boylii*), California mouse (*Peromyscus californicus*), and California pocket mouse (*Chaetodipus californicus*). Common reptiles found in scrub and chaparral habitats include California kingsnake (*Lampropeltis getula*), western rattlesnake, coachwhip, gophersnake, western fence lizard (*Sceloporus occidentalis*), and common side-blotched lizard. Because these species tend to have small home ranges and are unable to quickly disperse over large distances, local populations are subject to periodic extirpations and recolonizations associated with major disturbance events such as wildfires. Consequently, many wildlife species adapted to scrub and chaparral habitats exhibit short life spans, high potential reproductive rates, and large population fluctuations (i.e., boom and bust cycles).

3.1.4.4 Conifer Species

Conifer communities in the study area account for less than 3% of the land cover and are limited to the higher elevations. Similar to woodlands, conifer habitats provide important breeding and foraging habitat for many species that do not occur in lower elevation habitats, such as Cassin's finch (*Carpodacus cassinii*) and Clark's nutcracker (*Nucifraga columbiana*). White fir habitat (which accounts for about 50% of the coniferous habitat in the study area), for example, provides important cavity and snag nesting habitat because of the relatively high proportion of defective trees typically found in this community. Firs and other coniferous tree species also provide a large insect prey base for many bird species, including a variety of warblers. Jeffrey pine provides pine seed, bark, and foliage food sources for squirrels and mule deer. Coniferous forest is also important transit habitat for mule deer during migration, although the study area deer population is probably nonmigratory. Because of the relatively small amount of conifer woodland and forest in the study area, the wildlife populations dependent on coniferous habitats probably are relatively small, but several bird species that are common in coniferous habitats have been observed over the past decade, including Steller's jay (*Cyanocitta stelleri*), mountain chickadee (*Poecile gambeli*), and California quail (*Callipepla californica*). Two small mammals observed on site—western gray squirrel and Merriam's chipmunk (*Tamias merriami*)—are also strongly associated with coniferous habitats, as is the American black bear (*Ursus americanus*). Several other small mammals that occur in the coniferous habitats also are common in the woodland and savannah and scrub and chaparral habitats, including deer mouse and woodrat. Common reptiles observed on site in coniferous habitats, including California kingsnake, western rattlesnake, gophersnake, common garter snake (*Thamnophis sirtalis*), western fence lizard, and common side-blotched lizard, are also common in lower elevation habitats, as shown in Table 3.1-2.

3.1.4.5 Riparian and Wetland Species

Riparian, wetland, and wash communities are a relatively small component of the vegetation communities in the study area, accounting for just over 1% of the total cover. Of these communities wash is the largest component at 53%, with riparian/wetland habitat (excluding Castac Lake) accounting for 22% and riparian woodland habitats about 4% of the total. Castac Lake accounts for about 21% of the total. Generally, riparian and wetland communities support a large diversity of wildlife and provide important breeding and foraging habitat for a number of migrant bird species. The multiple strata (e.g., canopy, shrubs, herbaceous species) of riparian and wetlands communities provide breeding habitat, shade, cover, water, and food resources in the context of a dry California landscape. Riparian areas also function as important movement, migration, and dispersal corridors for a variety of wildlife. Open water and adjacent mudflats and beaches provides resting and foraging habitat for a number of resident and migrant waterfowl as well.

Due to the relatively small amount of riparian and wetland habitat in the study area, populations of riparian- and wetland-dependent species are expected to be small, but several predominantly riparian or wetland birds were observed during surveys, including marsh wren (*Cistothorus palustris*), common yellowthroat (*Geothlypis trichas*), and song sparrow (*Melospiza melodia*), among others. A variety of wetland and open water bird species were observed in association with open water and fringe wetlands around Castac Lake, including various herons and egrets (*Ardeidae*), grebes (*Podicipedidae* spp.*)*, gulls (*Larus* spp.), double-crested cormorant (*Phalacrocorax auritus*), American white pelican (*Pelecanus erythrorhynchos*), and red-winged blackbird (*Agelaius phoeniceus*). Mammals, such as brush rabbit (*Sylvilagus bachmani*), woodrat, striped skunk (*Mephitis mephitis*), raccoon, gray fox , and bobcat use riparian habitats primarily for cover, refuge, and movement, but also occur in other habitats in the study area with sufficient vegetative cover. Common reptiles and amphibians typically found in riparian, wash and wetland habitats include the California kingsnake, western rattlesnake, garter snake (*Thamnophis spp.*), and California toad (*Anaxyrus (Bufo) boreas*), but these species may also occur in other habitats with sufficient vegetative cover.

3.1.5 Wildlife Habitat Linkages and Corridors

3.1.5.1 Wildlife Habitat Linkages

The Tehachapi Mountains are a transverse (east–west) mountain range linking the Coast Ranges on the west with the southern end of the Sierra Nevada on the east. The range extends for approximately 40 miles in southern Kern County and varies in elevation from approximately 4,000 to 8,000 feet amsl. The study area is at the confluence of four major ecoregions, including Great Central Valley, Mojave Desert, Sierra Nevada, and South Coast Ranges (Hickman 1996). As such, the study area provides connectivity linkages for montane and desert species as well as species associated with foothills and grasslands.

3.1.5.2 Movement Corridors and Crossings

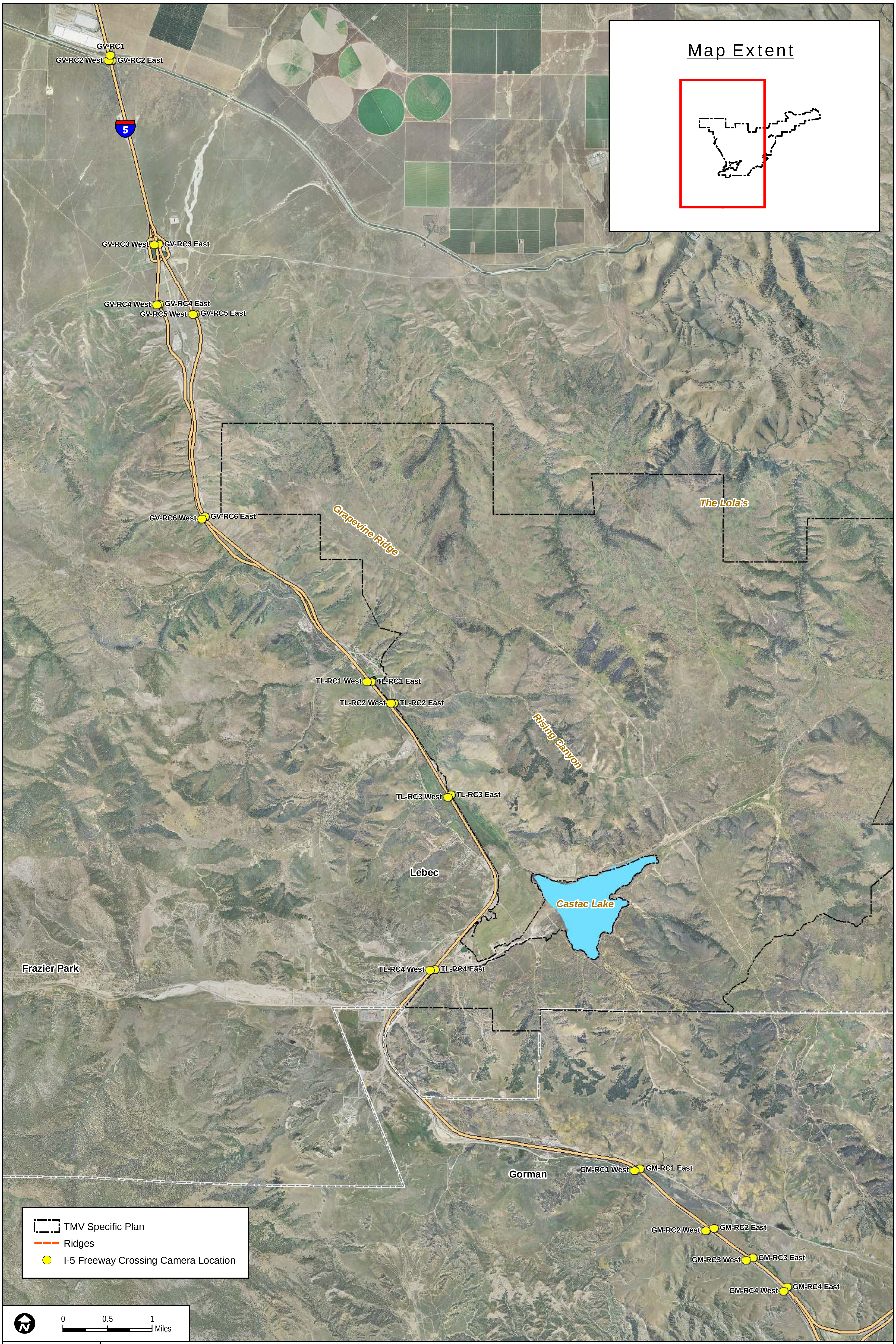
Closely related to habitat linkages is the concept of movement corridors and crossings. The vast majority of the study area currently provides a relatively unrestricted landscape for the movement of wildlife and dispersal of plants. I-5, various highway fences, and other significant linear infrastructure, such as the California Aqueduct[1], bisect the Tehachapi Mountains to the west of the study area. Linkage studies have noted that these facilities constitute significant wildlife movement barriers, but have not quantified the extent and location of potential east-west animal movement that may occur across the freeway and adjacent infrastructure (Penrod et al. 2003). For the purposes of analysis in this Supplemental Draft EIS, these barriers represent the existing baseline condition with respect to current wildlife movement in the study area and between the ranch and adjacent open space areas.

In order to assess the extent of wildlife crossings of I-5 between the study area and adjacent areas west of I-5, Tejon Ranchcorp (TRC) monitored wildlife movement using remote sensing camera stations at several potential wildlife crossing points along I-5 from 2002 through 2007 (Figure 3.1-3 and Table 3.1-3). These data were made available to Dudek and were summarized in the *Biological Technical Report for the TMV Planning Area* (Dudek 2009). The camera study results are subject to several limitations, including the following:

- The cameras used analog film, which limited the maximum number of photographs per roll. Certain cameras could not image wildlife until the film was changed.
- Certain cameras were inoperable at times until new batteries could be installed.
- Weather and other conditions adversely affected camera battery life and operations.
- Vegetation, structures, or camera angles could preclude imaging animals that might be crossing.
- The same animal may have been captured in multiple photographs.
- Mule deer have been observed crossing I-5 during the night and early morning hours, and at-grade crossings of the freeway were not captured in the camera data.

Subject to these considerations, the results of the monitoring program demonstrate that I-5 is not an impenetrable barrier to regional wildlife movement but is a substantial barrier. There were 1,842 mammals from 11 different species photographed during the photo-monitoring program, along with 20 different species of birds (Table 3.1-3). The number of mammals photographed was relatively low in the south (Gorman Group) (70) and highest in the north (Grapevine Group) (1,202). The northern camera site accounted for 65% of all mammals photographed in the study. Almost all (98%) of the 570 mammals at the central camera site were either deer (372 images) or raccoons (184 images). These animals were likely drawn to the meadows and other open foraging areas adjacent to this site.

[1] The California Aqueduct is generally underground as it passes through the Tehachapi Mountains.



SOURCE: TRC 2007

FIGURE 3.1-3

I-5 Freeway Crossing Camera Locations

Table 3.1-3. Results of I-5 Camera Studies

Cameras	Mammals Observed	Bird Species Observed
Grapevine Group		
GVRC1	None detected	American crow Brewer's blackbird Raven
GVRC2 E and W	38 ground squirrels 1 opossum 76 rabbits 19 raccoons 1 rat 3 red foxes	American coot American crow Barn swallow Black phoebe Brewer's blackbird Cooper's hawk House sparrow Killdeer Mallard duck Raven Rock dove
GVRC3 E and W	13 ground squirrels 1 mouse 13 rabbits 4 raccoons 1 skunk	Barn swallow Brewer's blackbird House sparrow Killdeer Raven Roadrunner
GVRC4 E and W	41 bobcats 136 coyotes 41 deer 94 ground squirrels 31 rabbits 2 raccoons	Roadrunner
GVRC5 E and W	15 bobcats 395 coyotes 144 deer 18 rabbits 18 raccoons	American crow Barn swallow Brewer's blackbird Roadrunner Rock dove
GVRC6 E and W	97 deer	None detected
Castac Lake Group		
TLRC1 E and W	1 bat 1 bobcat 115 deer 4 raccoons	Brewer's blackbird Raven
TLRC2 E and W	4 coyotes 110 deer	American crow Raven Red-tailed hawk

Cameras	Mammals Observed	Bird Species Observed
TLRC3 E and W	10 deer 1 pig 180 raccoons	American crow Black-billed magpie Black-crowned night heron Brewer's blackbird Cinnamon teal Common grackle Great egret Long-tailed grackle Mallard duck Northern shoveler Red-winged blackbird Snowy egret
TLRC4 E and W	7 coyotes 137 deer	None detected
Gorman Group		
GMRC1 E and W	1 bobcat 1 ground squirrel 1 raccoon	American crow Brewer's blackbird
GMRC2 E and W	3 bobcats 38 coyotes	None detected
GMRC3 E and W	2 bobcats 8 coyotes 15 rabbits 1 raccoon	Raven
GMRC4 E and W	None detected	Barn owl Raven
Source: Dudek 2009		

The extent to which the wildlife photographed actually crossed under I-5 cannot be definitively determined from the study. Movement across I-5 was more evident in the photographic record obtained at certain Grapevine Camera Group locations, including GVRC4 and GVRC5, where I-5 splits into separate elevated north and southbound lanes. Photographs at these locations indicate animals exiting either the east or west entrances at the camera locations. One species that was not detected in association with these crossings during the study period is the mountain lion (*Puma (Felis) concolor*), although other studies (Beier 19955, Foster and Humphrey 1995) have confirmed that this species is known to use fairly constrained crossings under roadways.

3.1.6 California Condor

3.1.6.1 Status and Distribution

The California condor is federally and state-listed as an endangered species and is classified by California as a fully protected species (California Department of Fish and Game 2011). The species is also protected under the Federal Migratory Bird Treaty Act (MBTA) (16 United States Code [U.S.C.] Sections 703–712). The Federal listing occurred on March 11, 1967 (32 *Federal Register* [FR] 4001), and the state listing occurred on June 27, 1971. On September 24, 1976, the U.S. Fish and Wildlife Service (Service) designated nine areas in the counties of Tulare, San Luis Obispo, Ventura, Kern, Santa Barbara, and Los Angeles, encompassing approximately 605,194 acres as critical habitat for the California condor (41 FR 41914–41916) (Figure 3.1-4). Critical habitat is defined in Section 3(5) of the Federal Endangered Species Act (ESA) as the specific areas within the geographical range of the species, at the time it is listed, on which are found those physical and biological features essential to the conservation of the species and which may require special management considerations or protections; and specific areas outside the geographical area occupied by the species at the time it is listed that are essential for the conservation of the species. The Tejon Ranch California condor critical habitat unit encompasses 134,871 acres. Of this, approximately 127,774[2] acres of critical habitat for the California condor are within the boundaries of Tejon Ranch (Figure 3.1-4). The Service's 1976 designation stated that the ranch primarily provides foraging functions that support condors nesting to the west in the designated Sespe-Piru Area.

Historically found throughout portions of the western United States, by the mid-20th century, California condors were largely confined to southern and central California (Snyder and Snyder 2000, Grantham 2007a). Breeding primarily occurred in the Los Padres, Angeles, and Sequoia National Forests in present-day San Luis Obispo, Santa Barbara, Ventura, Los Angeles, and Tulare Counties. Condors foraged in those areas as well as in open habitats in San Benito, Monterey, San Luis Obispo, Santa Barbara, Ventura, Kern, Tulare, and Fresno Counties. The mountains and foothills of southern California, in an arc around the southern central San Joaquin Valley (including the study area) to the southern Sierra Nevada, served as the last remaining refuge of the species until the last free-flying condor was removed from the wild in 1987 for captive breeding purposes (Figure 3.1-5). Captive-bred condors that were brought into captivity were released back into the wild beginning in 1992. Release sites include southern and central California, Arizona, and Baja, Mexico.

3.1.6.2 Habitat Characteristics and Use

The California condor occurs from sea-level to high montane meadows. Nesting habitat primarily includes forested montane regions, including redwood forests (Snyder and Snyder 2000). California condors have historically nested in various types of rock formations, including crevices, overhung ledges, and potholes, and, more rarely, in cavities in giant sequoia trees (*Sequoiadendron giganteum*) (Snyder et al. 1986). Condors in Central California are now nesting in cavities in coast redwood trees (*Sequoia sempervirens*) (Ventana Wildlife Society 2006).

California condors are obligate scavengers, primarily feeding on carcasses of medium- to large-sized mammals. As such, the availability of large dead prey, historically, was often unpredictable, leading condors to develop a wide-ranging search behavior that ultimately extended their range. Foraging flights occurred, and continue to occur, over vast areas encompassing hundreds of linear miles of travel each day (Meretsky and Snyder 1992). Foraging occurs mostly in relatively open grasslands, including ranchlands and pastures in chaparral areas or in oak savannahs (U.S. Fish and Wildlife Service 1996). Suitable foraging habitat for the California condor includes an adequate food supply, open areas where food can be easily located, and reliable air movements to allow for extended soaring.

Condors typically roost and sleep on horizontal limbs of tall trees, on ledges, or in cliff potholes, often near other condors. Traditional roosting sites are often located near important foraging grounds or, on a localized level, near a previously discovered carcass.

[2] Excludes acreage associated with Not-A-Part Inholdings on Tejon Ranch (i.e., lands owned by other entities, including California Department of Water Resources (DWR) and private entities).

3.1.6.3 Population Status and Threats

For over a century, the California condor population was declining (Snyder and Snyder 2000). Studies from the 1930s to 1950s gave a population estimate of 60 condors (Robinson 1939, 1940, Koford 1953). In 1978, the wild population was estimated at 30 individuals (Wilbur 1980). Comprehensive counts of California condors began in 1982 with the advent of photo-census efforts, allowing reliable identification of individuals. The wild population declined from an estimate of 21 individuals in 1982 to 19 individuals in 1983, 15 individuals in 1984, and 9 individuals in 1985 (Snyder and Johnson 1985). By the end of 1986, all but two wild California condors had been taken into captivity. On April 19, 1987, the last wild California condor was captured by a small team of biologists and taken to the San Diego Wild Animal Park.

Causes of the decline of the California condor population have been numerous and variable through time. Declines in the mid- to late 1800s may be attributed to indirect strychnine poisoning meant for the elimination of large predators like grizzly bears and wolves and could have been significant. Direct shooting of condors was also a major cause of the condor population decline. In more recent years, collisions with power lines, lead poisoning, ingestion of microtrash, and shooting are considered the principal causes of mortality as the species recovers.

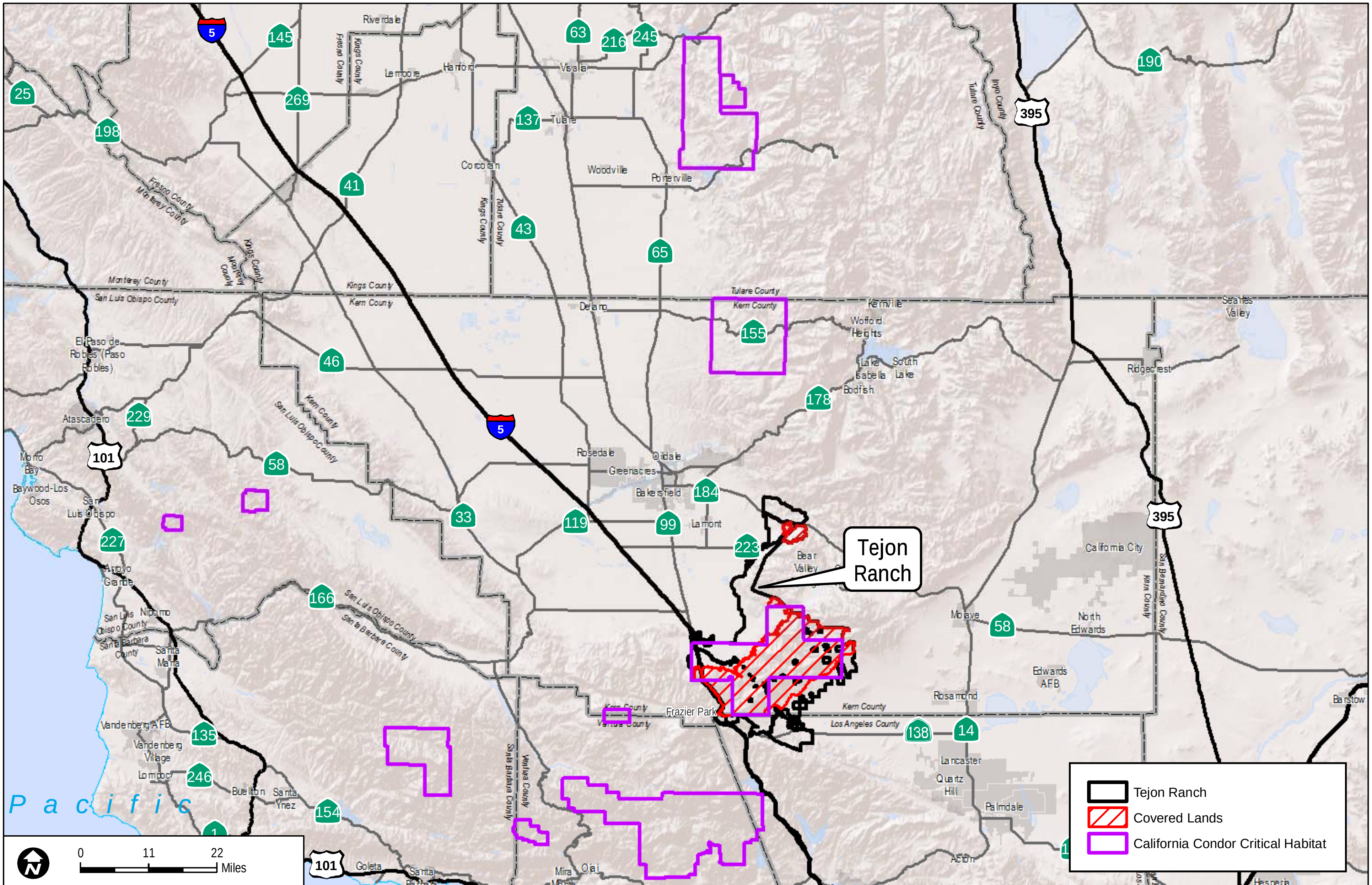
Lead poisoning as a result of ingestion of lead fragments in hunter-killed animals, is, in particular, considered to be a major cause of the decline of the California condor. Reintroduced and wild-fledged birds continue to suffer from lead poisoning. In January 2008, TRC implemented a total ban on the use of lead shot and bullets on the ranch. California subsequently enacted the Ridley-Tree Condor Conservation Act, which banned the use of lead ammunition for hunting in the range of the California condor effective July 1, 2008.

Microtrash, small bits of plastic and metal, such as bottle caps, pop-tops, PVC pipe fragments, and broken glass, that are inadvertently fed to hatchlings by their parents, is an important factor affecting condor breeding activity. Adult condors may inadvertently feed bits of microtrash to young, potentially mistaking the hard pieces to be bone chips, which are a normal part of a growing condor's diet and provide an important source of calcium to mineralize growing bones (Houston et al. 2007).

As of November 31, 2011, there were 391 California condors in the world population, including 182 in captivity and 209 in the wild (U.S. Fish and Wildlife Service 2011). The wild population includes 113 in central and southern California, of which approximately 40 currently inhabit southern California and have the potential to visit portions of the study area. Due to a combination of captive breeding and release and wild nest reproduction, this population is steadily increasing and is expected to continue to increase, barring stochastic catastrophes (Grantham 2007b). However, mortality in the wild, primarily as a result of lead poisoning, is currently exceeding natural reproduction in the wild (U.S. Fish and Wildlife Service, unpublished data), requiring ongoing captive breeding and release to supplement the wild population.

3.1.6.4 Conservation and Management

Between late 1985 and 1987, the Service and the California Department of Fish and Game (CDFG) captured the remaining free-flying California condors in order to conduct a managed breeding program to stabilize and increase the population. Captive rearing was determined to be necessary to increase the stock of remaining California condors and to maximize genetic diversity among the population.



SOURCE: USFWS 2011

FIGURE 3.1-4

California Condor Critical Habitat

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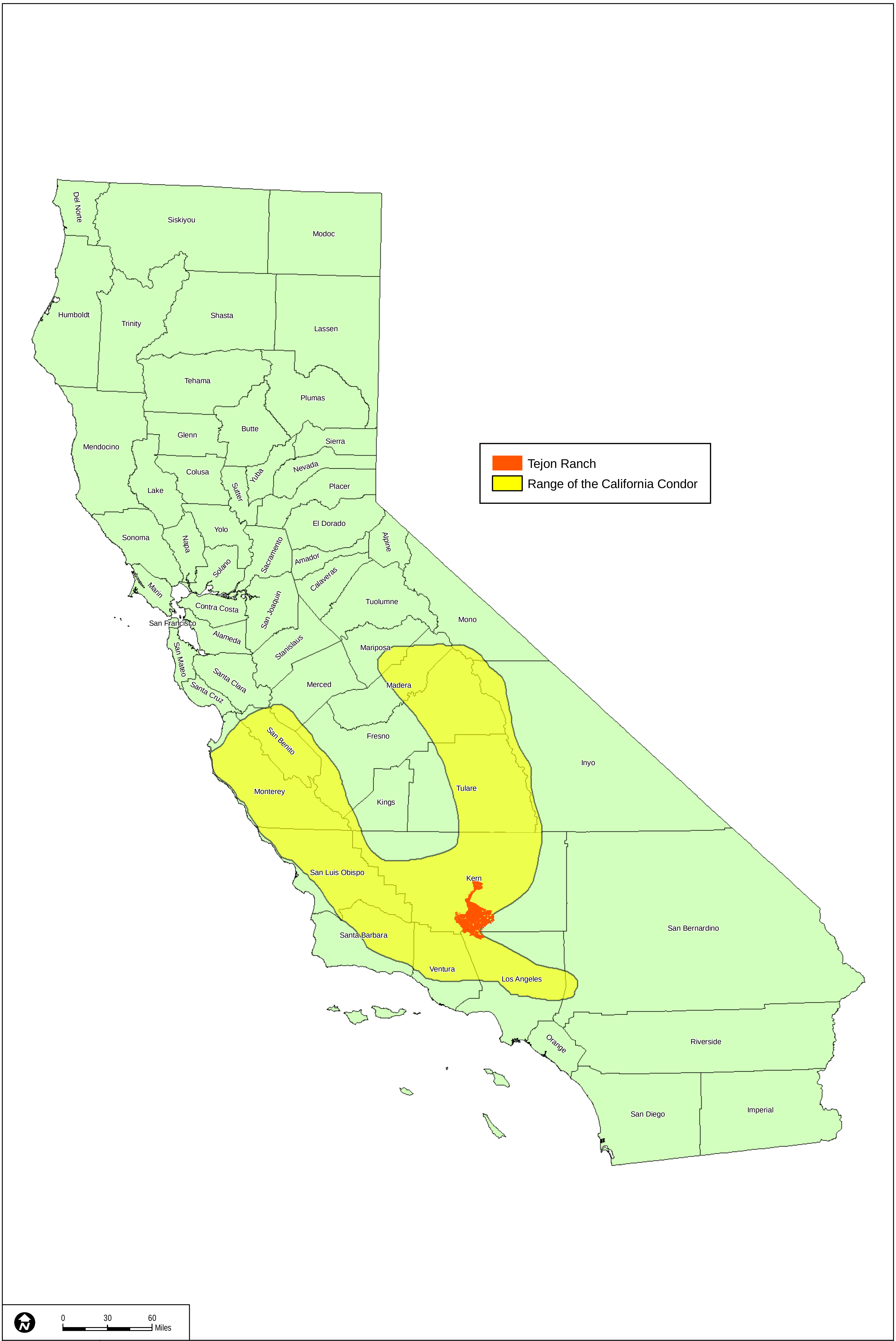


SOURCE: USFWS 2004

FIGURE 3.1-5

Historical Range of the California Condor in California

The first two releases of captive-bred California condors took place in the Sespe-Piru California condor critical habitat unit in 1992. Soon after, captive-reared condors were also released into the species' historical range near the Grand Canyon of Arizona as an experimental nonessential population. By 1998, there were over 50 California condors in the wild. A release site has also been established recently in Baja California, Mexico.

Released California condors have attempted breeding at several locations in the southern Los Padres National Forest in southern California. Several areas in the study area and neighboring mountains function as important local foraging areas near the current primary breeding range. Breeding attempts by released condors in the wild have met with mixed success, but wild-produced young are currently (March 2008) following their parents to historical feeding sites . All free-flying condors wear radio transmitters (many with global positioning system [GPS] features), allowing tracking of foraging, roosting, and feeding locations.

Young birds that were initially released early in the program exhibited excessive attractions to humans and human structures. In some cases, these behaviors have required the capture and relocation of a condor, or a temporary or permanent return to captivity. Condors currently in the wild have the propensity to investigate new stimuli in their environment and continue to investigate human structures. Some locations have served as perch or roost sites (e.g., communication towers in Los Angeles County) while others have supplied condors with food sources (e.g., hunting cabins). Efforts to deter condors from interacting with humans and human structures usually work, particularly if actions to haze birds from such areas happen quickly. If such behavior goes unchecked, and a condor receives positive conditioning from human interactions (e.g., food reward or absence of a negative interaction, such as hazing), the condor may lose its fear of humans entirely and become a danger to itself. A bird that has lost its fear of humans and will not respond to hazing efforts has become habituated.

Collisions with overhead wires have led to the loss of 11 condors. Early in the release program, a large number of collisions with powerlines in the Hopper Mountain/Sespe area motivated the California Condor Recovery Program to try different release sites. Efforts to remove or relocate powerlines within the condors' range, where collisions have occurred, have been successful in central California.

As previously noted, one of the primary problems facing condors is lead contamination in hunter-killed carcasses. Although supplemental feeding is identified as a recovery action in the California Condor Recovery Plan (Service 1996), this practice is not intended to be a long-term solution to condor recovery, nor has it proven effective in eliminating exposures to lead. Condors are currently foraging across large portions of their historic range, and finding their own food sources, despite the presence of supplemental food. The Service primarily supplies supplemental food to recently released, captive-bred, juvenile condors, and to aid in trapping for health checks and transmitter upkeep. The lead ammunition ban within the condor's range provided by the Ridley-Tree Condor Conservation Act, and TRC's voluntarily ban on lead ammunition, should help reduce mortality rates resulting from lead poisoning.

3.1.6.5 Occurrence in the Study Area

The study area is used by condors for foraging, roosting, and as a link to the other areas in their historic range. No condors have attempted to nest in the study area or anywhere in the Tehachapi Mountains, either before their removal from the wild or since their release back into the wild, probably due to the relative lack of suitable nesting habitat in this area. Traditional condor roost sites in the study are located on the northeast face of Winters Ridge, in the Condor Study Area, and in Tejon Canyon.

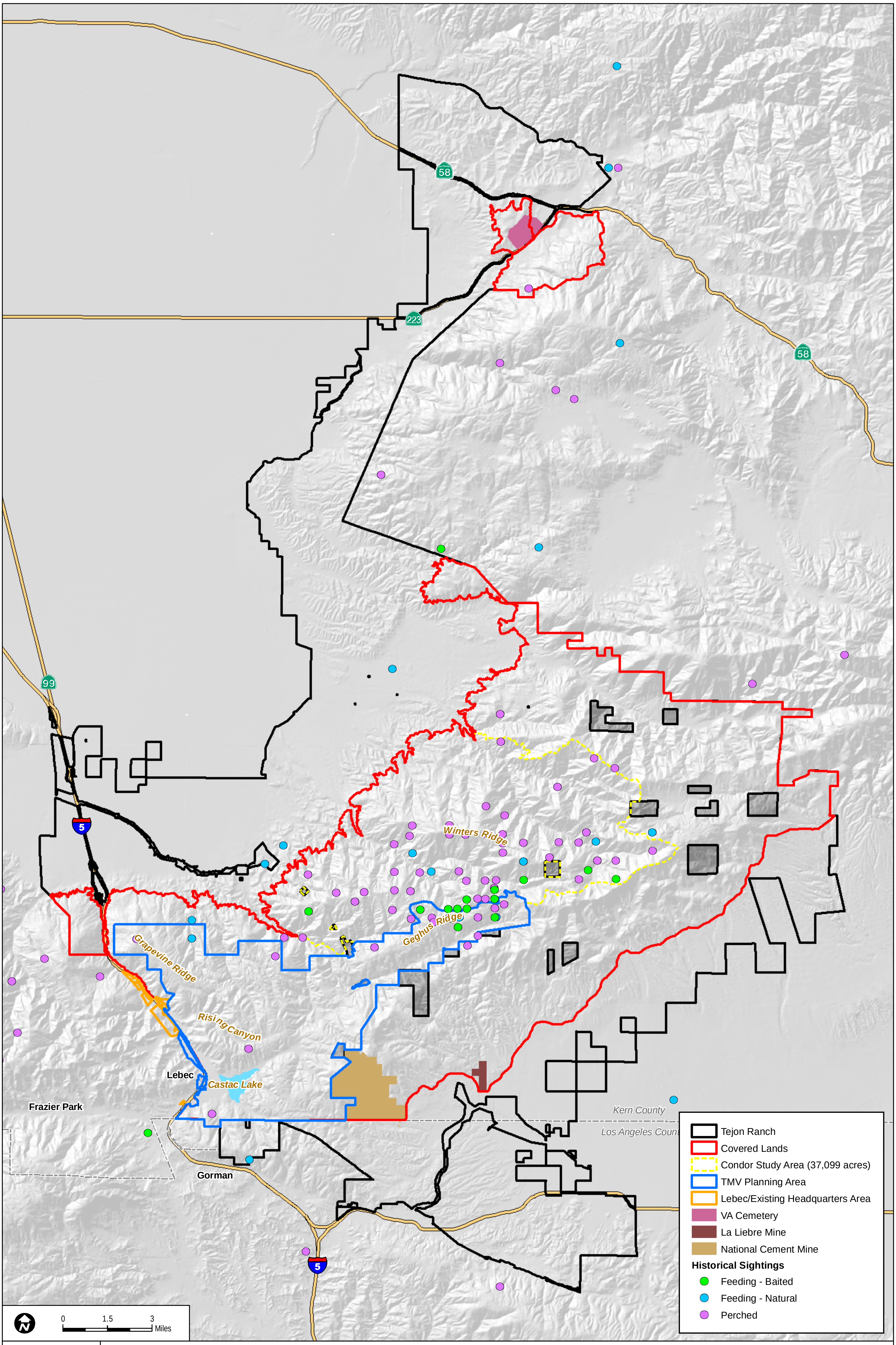
California condors were observed in the study area from 1850 (Koford 1953) through 1987 (Bloom 2008). Condors were typically observed foraging along the ridgelines and grasslands above the San Joaquin Valley floor. Portions of the study area have also provided a major flyway for California condors moving between historical nesting and foraging sites in the coastal ranges and the Sierra Nevada foothills. Although most portions of the California condor foraging range received some use by the species throughout the year from 1850 to 1987, the intensity of use varied seasonally and was closely correlated with historic patterns of food availability (Meretsky and Snyder 1992). In particular, the fall peak in California condor use of the Tehachapi Mountains, which includes the study area, appeared to be correlated with deer hunting season, with many records of birds feeding on deer gut piles or on wounded deer that had died.

In the mid-1980s, as part of the effort to track and eventually capture all remaining wild condors, locations in the study area (primarily the Tunis/Winters Ridge complex within the proposed Condor Study Area[3]) were used by the Service and Condor Research Center as supplemental feeding areas and to create pit trap and cannon net sites to capture condors. The feeding and bait stations resulted in very high concentrations of condors in this area as indicated by early condor telemetry data (Figure 3.1-6). Once the last wild condor was captured in 1987 for captive breeding efforts, these stations were closed.

Sporadic use of the study area, particularly within and adjacent to the Condor Study Area, continued through the early and middle stages of the reintroduction effort from 1996 through 2007, reflecting the availability of carcasses from grazing and hunting activities, combined with the suitable foraging and roosting habitat available on the ranch. However, beginning in early 2008, condor use of the study area began to increase. The Service attributes the increase in use of Tejon Ranch by condors to the natural recolonization of the species range, as well as the availability of suitable roosting and foraging habitat and a regular food source in the form of naturally deceased livestock, carcasses and gut-piles from hunter-killed game animals, and feral pig carcasses from year-round pig hunting and control activities on the ranch.

The Service contracted with the U.S. Geological Survey (USGS) to conduct an independent analysis of all condor data sets for the southern California subpopulation of the California condor. USGS analyzed the use of space by condors in six management units in southern California, including three outside the study area (Hopper Mountain and Bitter Creek National Wildlife Refuges, Wildlands Conservancy–Wind Wolves Preserve) and three within the study area (TMV Planning Area, Condor Study Area, and the remaining areas of Tejon Ranch). Space use was analyzed using location data from GPS transmitters collected by the Service between 2004 and 2009, as well as geographic information system (GIS) data. The results of this analysis identify probable use by California condors of these six management units, with the Hopper Mountain and Bitter Creek National Wildlife Refuge units receiving the highest overall concentration of use by condors during this time period. Within Tejon Ranch, the Condor Study Area unit received the highest concentration of use during this period. The analysis also identified individual condor home ranges for the population of

[3] As described in Chapter 2, Proposed TU MSHCP and Alternatives, the Condor Study Area encompasses approximately 37,100 acres in the Tehachapi Uplands. This area includes very high value condor habitat and areas of historically frequent condor foraging and roosting activity, as shown in telemetry, GPS, and observational data.



SOURCE: USFWS 2011

FIGURE 3.1-6

Historical Sightings (through 1982) California Condor Use Data

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California condors occupying southern California, and clarified that condors currently use, and are likely to continue to use, all three of the Tejon Ranch management units, as well as the other three management units outside Tejon Ranch. The Service considers the USGS study and recent GPS data to be the best scientific information available regarding condor use of these management units, and the data provide the most updated interpretation of condor use of Tejon Ranch. A copy of the USGS study is provided in Appendix I, TMV Specific and Community Plan Mitigation Monitoring and Reporting Program. Figure 3.1-7 illustrates the expanded range of condor based on GPS data collected between January 2010 and May 2011.

The Service also revised the model of foraging habitat for the California condor on Tejon Ranch provided in the Draft EIS to complete the effects analysis provided in this Supplemental Draft EIS. Based on this model, the Service determined that grasslands and oak savannahs are the vegetation communities on Tejon Ranch where condors are the most likely to consistently access food, and constitute the vast majority of suitable foraging habitat in the study area. Although condors can locate food and feed under the canopy of various habitat types, including woodlands and chaparral, the Service does not believe this happens as consistently as feeding that occurs in savannahs or grasslands. The total amount of modeled foraging habitat in the study area is 84,112 acres (Figure 3.1-8). Please refer to Master Response 1E, California Condor Loss of Foraging Habitat, in Volume II of this Supplemental Draft EIS for a more thorough discussion of the approach used by the Service to model foraging habitat for the California condor.

3.1.7 Other Wildlife Species Considered for Conservation under the TU MSHCP

This section describes the status of the other special-status wildlife species in the study area that are proposed for regulatory coverage under the TU MSHCP. For each species, the Federal and state regulatory status and range-wide distribution of the species are described, followed by a description of the species' known habitat associations and its occurrence in the study area, including a summary of surveys conducted for the species in the TMV Planning Area, known occurrences, and modeled habitat. Table 3.1-4 provides a summary list of the species considered for coverage in the TU MSHCP. Refer to Section 3.1.8, Plant Species Considered for Conservation under the TU MSHCP, for a discussion of the species and methods used to evaluate special-status plant species considered for coverage in the TU MSHCP.

3.1.7.1 Method for Evaluating Species Use of the Study Area

The use of the study area by other wildlife species was evaluated by compiling occurrence data through species-specific surveys and collection of historical data, and through an analysis of modeled vegetation and habitat associations to predict occurrence and species use patterns.

Occurrence Data

Species occurrence data were reviewed and used to develop an understanding of the general distribution and relative abundance of species proposed for coverage under the TU MSHCP. Two primary sources of spatial (GIS-based) data were used: species occurrence data collected during various surveys in portions of the study area and California Natural Diversity Database (CNDDB) occurrence data . Specifically, detailed special-status species data, compiled from 1999 to 2007, for the TMV Planning Area includes amphibian, reptile, and bird surveys through 2004 (Impact Sciences

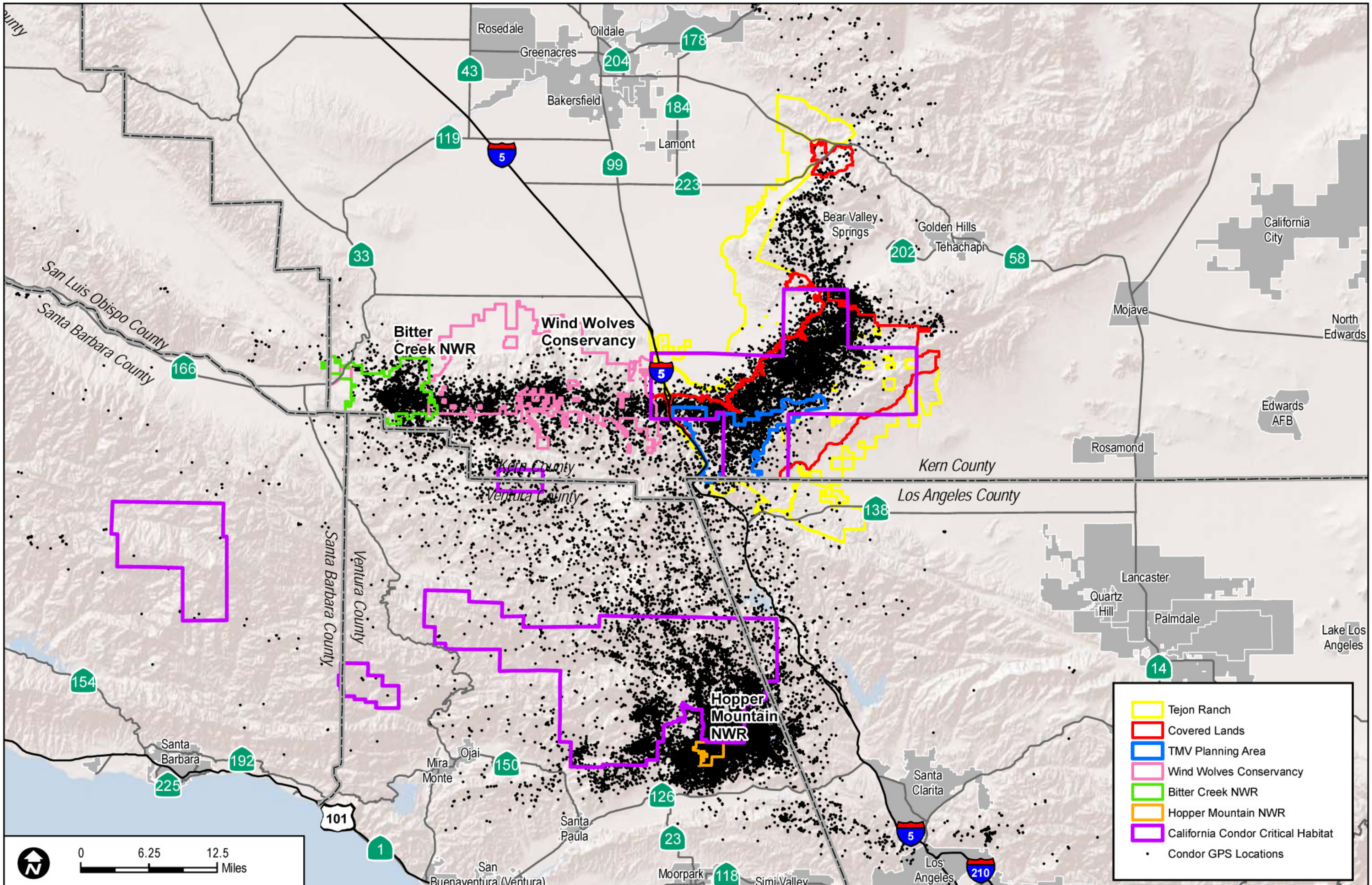
2004); wildlife surveys in 2005 (Jones & Stokes 2006, 2008); and wildlife surveys in 2007 (Dudek 2007a, 2007b). Appendix E describes the methods used to complete the 2007 surveys; the literature review; previous surveys and Service and/or CDFG protocol-level surveys for the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus)*, least Bell's vireo (*Vireo bellii pusillus*), little willow flycatcher (*Empidonax traillii brewsteri*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and burrowing owl in the TMV Planning Area; focused surveys for the Tehachapi slender salamander (*Batrachoseps stebbinsi*), western spadefoot, and yellow-blotched salamander (*Ensatina eschscholtzii croceater*) in the TMV Planning Area; general reconnaissance surveys for the coast horned lizard (*Phrynosoma coronatum*) and two-striped garter snake (*Thamnophis hammondii*); accepted raptor survey methods for the American peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), California spotted owl (*Strix occidentalis occidentalis*), golden eagle, northern goshawk (*Accipiter gentilis*), and white-tailed kite (*Elanus leucurus*) (the purple martin was covered during the raptor surveys); habitat-specific reconnaissance surveys for the tricolored blackbird (*Agelaius tricolor*); camera studies for the ringtail (*Bassariscus astutus*); and live-trapping studies for the Tehachapi pocket mouse (*Perognathus alticola inexpectatus*).

Factors related to the detectability of species and survey limitations, listed below, are also discussed in Appendix E.

- Most surveys were conducted during daytime hours to maximize the detection of diurnal avian species, so there were relatively fewer detections of nocturnal species. Live-trapping and camera studies were conducted for the nocturnal Tehachapi pocket mouse and ringtail, respectively.
- Many reptile and amphibian species are secretive, cryptic, and highly seasonal, and therefore difficult to detect using meandering transect methods. Focused surveys were conducted for Tehachapi slender salamander, western spadefoot, and yellow-blotched salamander because these species have relatively well-defined and discrete habitat associations (e.g., drainages, ponds and ephemeral pools), but upland species such as coast horned lizard are more widely and sporadically distributed.
- Breeding raptor surveys in 2007 were initiated in March rather than earlier in the breeding season due to weather-related access issues, so some early nesting may have been missed.

Habitat Models

Because prior species surveys concentrated on development areas where effects would be likely to occur, and because the sightings noted in the CNDDB are sporadic, the effects analysis in this Supplemental Draft EIS is primarily based on modeled habitat for the 27 species (21 wildlife species discussed in this section, and 6 plant species, discussed in Section 3.1.8, Plant Species Considered for Conservation under the TU MSHCP, below) proposed for regulatory coverage under the TU MSHCP. Spatial data used for the habitat models included vegetation communities, canopy cover, water features and drainages, elevation, slope, and soils, as applicable and as indicated by the scientific literature available for the species. Habitat for each of the species was assigned to different use categories, including generally suitable habitat (meeting all life history needs of species), primary breeding habitat, wintering habitat, breeding/foraging habitat, secondary breeding/foraging habitat, foraging habitat, and secondary foraging habitat (Appendix D). Once the habitat model data and parameters were finalized, the models were generated in GIS. However, because of the general nature of the data and model parameters, it was not possible to incorporate



SOURCE: USFWS 2011; USFWS 2011 unpublished data; TRC 2007

FIGURE 3.1-7

California Condor GPS Locations (Aerial and Ground) in Southern California, January 1st, 2010 - May 9th, 2011

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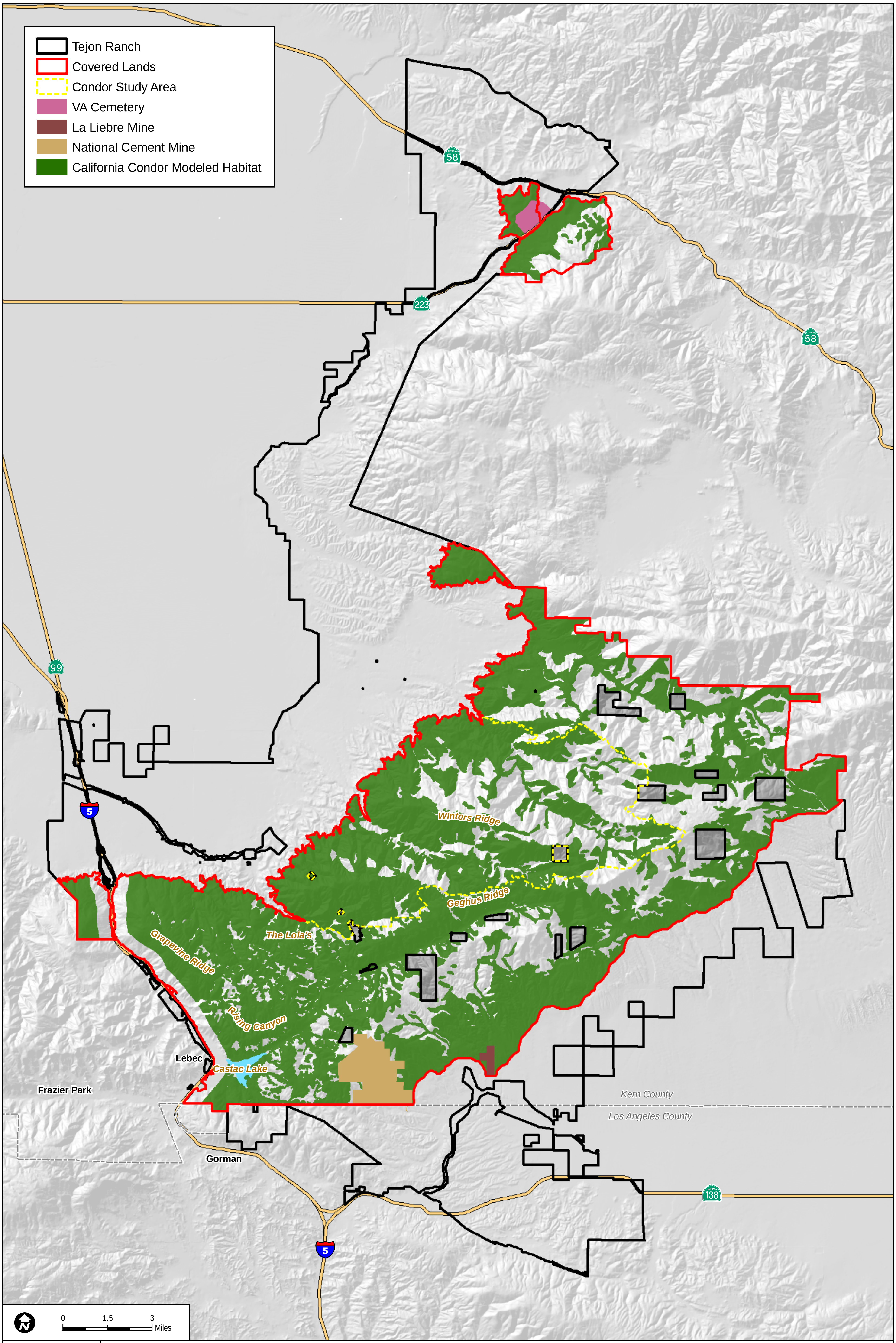


SOURCE: TRC 2007
USFWS 2011

FIGURE 3.1-8
California Condor Modeled Habitat

microhabitat features into the models that may be important for selection and patterns of habitat use for many of the species. As a result, the habitat models are considered conservative and likely overestimate the amount of habitat actually occupied by a species in the study area (i.e., it is unlikely that all modeled habitat would be saturated by a species because some modeled habitat may not contain all the microhabitat features required by the species. Conversely, a species population may be limited by factors other than available habitat.). For this reason, the habitat models are not intended to be used as predictors of actual occupation of certain areas of the study area by a species, but rather as a general analytic tool for the effects analysis provided in this Supplemental Draft EIS.

Two non-spatial (GIS-based) resources related to species occurrences were also used to determine general distribution patterns, including geographic and elevation ranges, of the species proposed for coverage under the TU MSHCP: the California Native Plant Society (CNPS) online inventory (California Native Plant Society 2007) and CDFG's Life History Accounts and Range Maps — California Wildlife Habitat Relationships System (California Department of Fish and Game 2007a).

Table 3.1-4. Covered Species – Tehachapi Uplands Multiple Species Habitat Conservation Plan

Common Name	Scientific Name	Federal Status	State Status	CRPR [4] List
Invertebrates				
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	None	None
Amphibians				
Tehachapi slender salamander	*Batrachoseps stebbinsi*	None	ST	None
Yellow-blotched salamander	*Ensatina eschscholtzii croceater*	None	SSC	None
Western spadefoot	*Spea hammondii*	None	SSC	None
Reptiles				
Two-striped garter snake	*Thamnophis hammondii*	None	SSC	None
Coast horned lizard (*frontale* and *blainvillii* populations)	*Phrynosoma coronatum*	None	SSC	None
Birds				
Tricolored blackbird	*Agelaius tricolor*	None	SSC	None
Burrowing owl	*Athene cunicularia*	None	SSC	None
Golden eagle	*Aquila chrysaetos*	None	SSC, FP	None
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FC	SE	None
Yellow warbler	*Setophaga [Dendroica] petechia brewsteri*	None	SSC	None
White-tailed kite	*Elanus leucurus*	None	FP	None
Little willow flycatcher	*Empidonax traillii brewsteri*	None	SE	None
Southwestern willow flycatcher	*Empidonax traillii extimus*	FE	SE	None
American peregrine falcon	*Falco peregrinus anatum*	None	FP	None
California condor	*Gymnogyps californianus*	FE	SE, FP	None
Bald eagle	*Haliaeetus leucocephalus*	None	SE, FP	None

[4] In March 2010, CDFG changed the name of the CNPS List or CNPS Ranks to California Rare Plant Rank (CRPR). This was done to reduce confusion over the fact that CNPS and CDFG jointly manage the Rare Plant Status Review groups (300+ botanical experts from government, academia, nongovernment organizations, and the private sector) and to indicate that the rank assignments are the product of a collaborative effort and not solely a CNPS assignment.

Common Name	Scientific Name	Federal Status	State Status	CRPR [4] List
Purple martin	*Progne subis*	None	SSC	None
Least bell's vireo	*Vireo bellii pusillus*	FE	SE	None
Mammals				
Ringtail	*Bassariscus astutus*	None	FP	None
Tehachapi pocket mouse	*Perognathus alticolus inexpectatus*	None	SSC	None
Plants				
Kusche's sandwort	*Eremogone macradenia var. arcuifolia* (formerly *Arenaria macradenia* var. *kuschei*)	None	None	None
Tehachapi buckwheat	*Eriogonum callistum*	None	None	1B.1
Fort Tejon woolly sunflower	*Eriophyllum lanatum* var. *hallii*	None	None	1B.1
Round-leaved filaree	*California macrophyllum*	None	None	1B.1
Tejon poppy	*Eschscholzia lemmonii* ssp. *kernensis*	None	None	1B.1
Striped adobe lily	*Fritillaria striata*	None	ST	1B.1

Notes:
Federal Status: FE=Listed as Endangered, FT=Listed as Threatened, FC=Federal Candidate
State Status: ST= State Listed as Threatened, SE=State Listed as Endangered, SSC= Species of Special Concern, FP=State Fully Protected
CRPR List 1B.1=Rare, threatened, or endangered in California and elsewhere, seriously endangered in California.

3.1.7.2 Amphibians

Tehachapi Slender Salamander

Status and Distribution

The Tehachapi slender salamander was listed by the State of California as threatened in 1971. In October 2011, the Service completed a status review of the species and found that listing the salamander as threatened or endangered under the ESA was not warranted (76 FR 62900).

The Tehachapi slender salamander is endemic to California and is only known to occur in Kern County. The species has been documented to occur from 1,804 to 4,825 feet amsl throughout its range (Hansen 2009, p. 2; Sweet *in litt*. 2011, p. 1). The species can be found in the Caliente Creek drainage in the Piute Mountains as well as through the Tehachapi Mountains to Fort Tejon (CaliforniaHerps 2007a). In Caliente Canyon and several tributary canyons outside of the study area, at the junction of the Sierra Nevada and Tehachapi Mountains, Tehachapi slender salamanders have been recorded from 18 localities at elevations of 1,804 to 4,825 feet amsl (550 to 1,471 meters) (California Department of Fish and Game 2011; Brame and Murray 1968; AmphibiaWeb 2008). Populations also occur in several isolated canyons on the northern slopes of the Tehachapi Mountains, ranging from Tejon Canyon southwest to Fort Tejon, at elevations of 3,100 to 4,692 feet amsl (Yanev 1980, Stebbins 1985, Jockusch 1996, Wake 1996, Wake and Jockusch 2000, AmphibiaWeb 2008). In 1957, a specimen was found from the north slope of Black Mountain (2,998 feet) in the vicinity of Tehachapi Pass, between the Tehachapi Mountains and Caliente Canyon populations (Brame and Murray 1968).

Habitat Characteristics and Use

The Tehachapi slender salamander inhabits moist canyons and ravines in oak and mixed woodlands (CaliforniaHerps 2007a). Hansen and Wake (pers. comm.) indicate that Tehachapi slender salamander occurs on north-facing slopes within talus piles, where canyon live oak occurs. The habitat is also defined by Morey (2005) as including valley-foothill, hardwood-conifer, and valley-foothill riparian habitats, including all stages of blue oak savannah, gray pine-oak woodland, riparian deciduous habitat types, mountain meadow, and all successional stages of mixed conifer forest (U.S. Forest Service 2006a). Recently, the Tehachapi slender salamander was documented for the first time in dead yuccas (*Yucca* spp.) on north-facing slopes (Sweet 2011). The decomposing leaf bases may hold water from snowmelt for a considerable period of time, providing a suitable moist microhabitat for the species; one such dead yucca supported 20 individuals (Sweet 2011). Sweet (2011) suggests that the species may be more widespread in such habitat on north-facing slopes between Lockwood Valley and Walker Basin, within the range of the Tehachapi slender salamander. During the moist periods of fall, winter, and spring precipitation, individuals seek cover under surface objects, especially rock talus (Brame and Murray 1968). Other substrates that may be used for cover include rocks, logs, bark, dead yuccas and other debris in moist areas, especially in areas with much leaf litter (CaliforniaHerps 2007a, Sweet 2011). However, the Tehachapi slender salamander are primarily associated with talus (Hansen and Wake pers. comm.).

Along Caliente Creek, Tehachapi slender salamanders are restricted to the lower margins of north-facing slopes bordering the creek and a few small side canyons. They are associated with granitic or limestone talus and scattered rocks. Gray pine, interior live oak, canyon live oak, blue oak, Fremont cottonwood (*Populus fremontii*), sycamores (*Platanus* spp.), and California buckeye (*Aesculus californica*) can be found in this area (Brame and Murray 1968). California juniper (*Juniperus californica*), yucca (*Yucca* spp.), bush lupine (*Lupinus* spp.), and buckwheat (*Eriogonum* spp.) grow at more exposed locations where Tehachapi slender salamanders are found in Caliente Creek. Substrates range from sandy-gravelly loam to decomposed granite (AmphibiaWeb 2008). At the higher elevations of the canyons of the Tehachapi Mountains, Tehachapi slender salamanders occur in areas of downed wood or talus rather than the rocks of the Caliente Creek populations (AmphibiaWeb 2008). As noted above, the discovery of the species in dead yucca suggests that the Tehachapi slender salamander may be more widespread within its range than previously thought (Sweet 2011).

Specific habitat requirements for breeding or egg laying for this species are not well documented. Similar species lay their eggs underground or on moist substrates underneath or within surface objects, especially pieces of bark (Stebbins 1972). It is unknown how the habitat of juvenile Tehachapi slender salamander differs from that of adults.

Occurrence in the Study Area

Presence/absence surveys for the Tehachapi slender salamander were conducted in all suitable habitat within the TMV Planning Area in four phases (Appendix E). Tehachapi slender salamander was positively documented only in 2007 and only in Monroe Canyon in the TMV Planning Area in a moist drainage with leaf litter, talus, and live oak (Jones & Stokes 2008). No positive detections were made in the other 76 drainages that were surveyed (Jones & Stokes 2008). However, there are four CNDDB occurrences of Tehachapi slender salamander in the study area, including two in Bear Trap Canyon, one in a drainage adjacent to the California aqueduct, and one in Tejon Canyon in the northeastern section of the southern portion of the study area. In addition, it is important to note that the Tehachapi slender salamander is very difficult to detect and identify, and the survey method focused on above-ground sites to avoid ground disturbance and disturbance of subterranean habitat, where the species is more likely to occur. Therefore, survey results, while positively documenting the species in the study area, are not entirely representative of the species occurrence or distribution in the study area.

Modeled habitat for the Tehachapi slender salamander includes broad-leafed upland tree-dominated communities, coniferous upland forest and woodland, scrub, chaparral, and scrub oak communities with a canopy cover greater than 40% that also meet all of the following criteria: (1) within 150 feet on either side of a blue line stream (Tejon Ranchcorp 2002b), (2) on north-facing slopes, and (3) at elevations up to 5,000 feet (Zeiner et al. 1988). The scrub and chaparral communities are included in the model because they may include yucca. Approximately 4,071acres of suitable habitat were modeled in the study area, which includes many drainages where the species was not detected in the 2007 focused survey (Figure 3.1-9). However, as noted above, the surveys focused on detecting individuals active on the surface and were conducted to minimize physical damage to potentially occupied habitat. Because the study area represents the core area for this species and because the surveys could not rule out occupation of suitable habitat where the species was not detected, Tehachapi slender salamander is assumed to occur elsewhere in the study area in modeled habitat, although not all modeled habitat is expected to be occupied.

Western Spadefoot

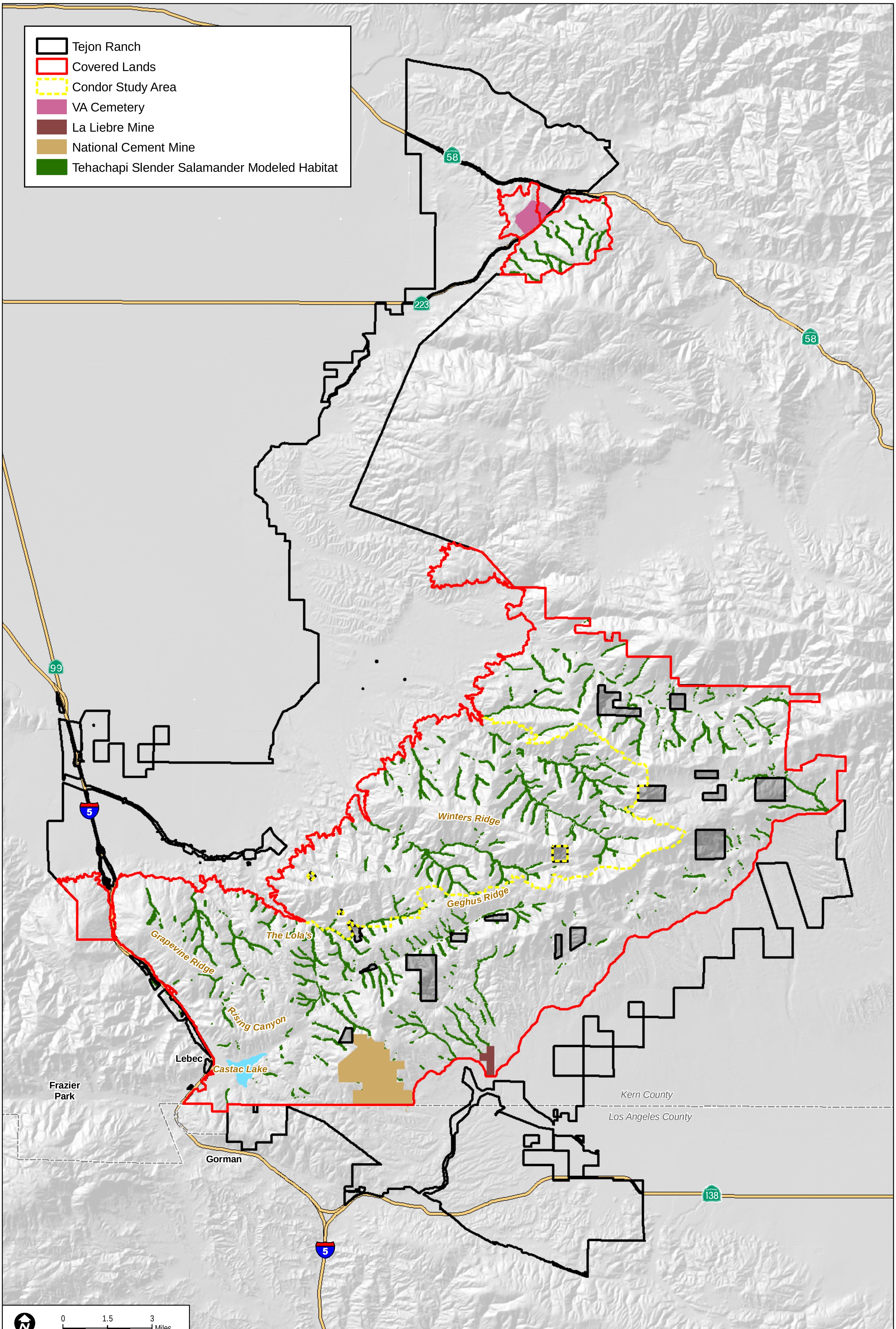
Status and Distribution

Western spadefoot has no federal designation, but is a CDFG Species of Special Concern (California Department of Fish and Game 2011). The western spadefoot is a Covered Species in the Recovery Plan for Vernal Pool Ecosystems in California and Southern Oregon (U.S. Fish and Wildlife Service 2005).

The western spadefoot is endemic to California and northern Baja California. The species ranges from the north end of California's great Central Valley near Redding to the south, east of the Sierra Nevada and the deserts, into northwest Baja California (Jennings and Hayes 1994, Stebbins 2003). Although the species primarily occurs in lowlands, it also occupies foothill and mountain habitats. Within its range, the western spadefoot occurs from sea level to 4,000 feet amsl, but mostly at elevations below 3,000 feet amsl (Stebbins 2003). The western spadefoot has been extirpated throughout most of the lowlands of southern California and from many locations within the Central Valley (U.S. Fish and Wildlife Service 2005). The western spadefoot has undergone serious population declines in the Sacramento Valley, with more moderate declines in the San Joaquin Valley and the Coast Ranges (U.S. Fish and Wildlife Service 2005). Jennings and Hayes (1994) concluded that western spadefoot was extant in 18 California counties and had been extirpated from six others. About 80% of the habitat once known to be occupied by western spadefoot in southern California has been developed or converted to uses incompatible with successful reproduction or recruitment (Jennings and Hayes 1994).

Habitat Characteristics and Use

The western spadefoot occurs in open areas with sandy or gravelly soils in a variety of habitats, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, river floodplains, alluvial fans, playas, and alkali flats (Stebbins 2003, Holland and Goodman 1998), and riparian habitats with suitable water resources (Holland and Goodman 1998). However, the species



SOURCE: TRC 2007

FIGURE 3.1-9

Tehachapi Slender Salamander Modeled Habitat

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is most common in grasslands with vernal pools or mixed grassland/coastal sage scrub areas (Holland and Goodman 1998). Within these habitats, the species requires rain pools with water temperatures of between 9°C and 30°C (Brown 1966, 1967) that persist with more than 3 weeks of standing water in which to reproduce (Feaver 1971). Jennings and Hayes (1994) report that rain pools must lack fish, bullfrogs, and crayfish in order for successful reproduction and metamorphosis to occur; it is reasonable to assume that this predator-free condition would also apply to waters (e.g., backwater areas) within riparian areas used for breeding.

Occurrence in the Study Area

Presence/absence surveys were conducted in 2007 for western spadefoot larvae (tadpoles), adults, and juveniles in all suitable aquatic breeding habitat in the TMV Planning Area, including ponded water, seeps, and springs (Appendix E). Each potential aquatic breeding site was visually inspected for tadpoles monthly in March, April, and May. Western spadefoot was not observed in the TMV Planning Area during these surveys, and is considered to have a low potential to occur in the TMV Planning Area below 3,000 feet amsl and a very low potential to occur above 3,000 feet amsl. Based on the negative presence/absence surveys in the TMV Planning Area, the western spadefoot also is considered to have a low potential to occur elsewhere in the study area below 3,000 feet amsl and very low potential to occur above 3,000 feet amsl.

Modeled habitat for western spadefoot in the study area focused on riparian and wetland breeding habitat types including riparian scrub, oak riparian, riparian woodland, riparian/wetland, desert wash/riparian seeps, wash, and wetland), and all seeps and springs at all elevations up to 4,500 feet amsl. The habitat model also includes a buffer of 5 feet from the edge of each of these habitat types (Appendix D). Approximately 1,175 acres of suitable habitat for western spadefoot were modeled in the study area (Figure 3.1-10).

Yellow-Blotched Salamander

Status and Distribution

The yellow-blotched salamander (also referred to as yellow-blotched ensatina) has no Federal designation but is a CDFG Species of Special Concern (California Department of Fish and Game 2011).

The yellow-blotched salamander is endemic to California. Its known range is restricted to Kern and Ventura counties in California and extends from the Piute Mountains southwestward to the vicinity of Alamo Mountain along the Tehachapi Mountains (California Department of Fish and Game 2008). The yellow-blotched salamander is known to occur in the Tehachapi Mountains, Mount Pinos, near Fort Tejon, and near Frazier-Alamo Mountain (CaliforniaHerps 2007b). The yellow-blotched salamander occurs at elevations ranging from 1,400 to 7,496 feet amsl at Piute Peak in Kern County.

Habitat Characteristics and Use

The natural history for yellow-blotched salamander is in large part based on information for the full ensatina species *E. eschscholtzii* where specific information for the subspecies yellow-blotched salamander is lacking. Where specific information for the yellow-blotched salamander is available, it is described as such. Generally, the yellow-blotched salamander subspecies has more specific habitat requirements than typically described for the full *ensatina* species. Ensatinas broadly occur in coniferous forest, deciduous forest, oak woodland, coastal sage scrub, and chaparral (Stebbins

1951). According to the U. S. Forest Service, however, the yellow-blotched salamander subspecies most often occurs in mountain meadow and mixed-conifer type habitats (U.S. Forest Service 2006b). CaliforniaHerps (2007b) similarly describes this subspecies as occurring in evergreen and deciduous forests. The yellow-blotched salamander is associated with canyon live oak habitat but appears not to inhabit areas with blue oak (Block and Morrison 1998). In general, mean canopy cover exceeds 55% (Germano 2006); however, Hansen and Wake (pers. comm.) indicate that this subspecies might occur under any canopied area on north-facing (0° to 90° and 0° to 270°) slopes.

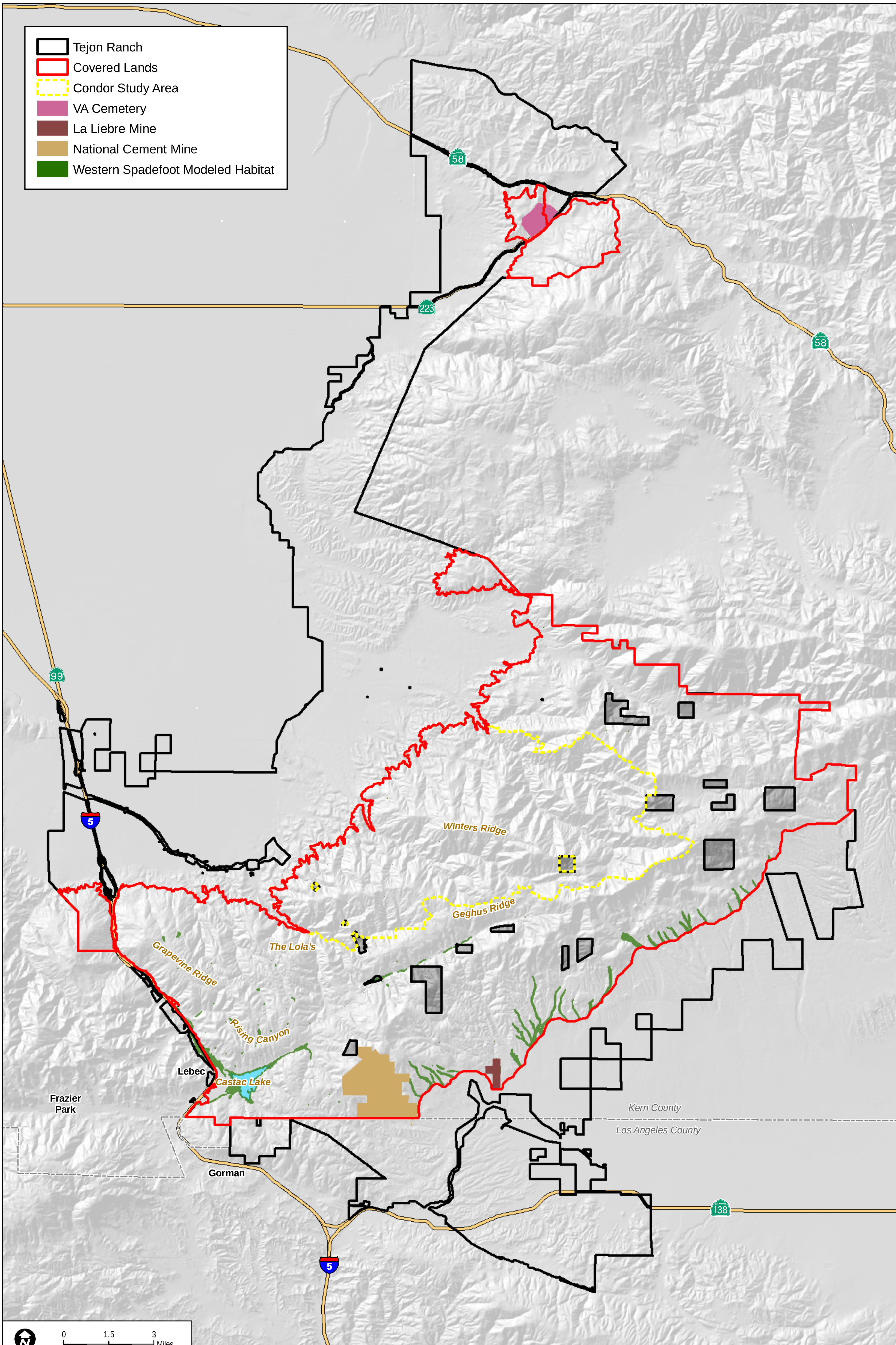
As a species, ensatinas are generally abundant at edge habitats and seem to prefer flat or gently sloping shelves above flood level to steep terrain. According to Stebbins (1951), however, the yellow-blotched salamander subspecies is more common in north-facing areas that are shaded, especially near creeks and streams. The yellow-blotched salamander typically occurs under rocks, logs, and other surface debris, especially under fallen bark near decaying logs (CaliforniaHerps 2007b). Soils supporting yellow-blotched salamander generally are loamy and relatively warmer and moister than the ambient temperature and humidity (Germano 2006). The yellow-blotched salamander stays inside moist logs, animal burrows, and woodrat nests, and under roots and rocks during dry or very cold weather (CaliforniaHerps 2007b). Adults and juveniles appear to occur in somewhat different habitat, with adults occurring more often in drier soil, farther from streams, and on slopes with a northwestern aspect, as compared to juveniles (Germano 2006).

Occurrence in the Study Area

Impact Sciences reported occurrences of yellow-blotched salamanders from northeast of Castac Lake, Pastoria Creek, north of the National Cement leasehold, and Rising Canyon from surveys conducted in 2000 and 2001. In 2005, two yellow-blotched salamanders were observed in a drainage located in the eastern/central portion of the study area (Jones & Stokes 2006). There is also one CNDDB occurrence of yellow-blotched salamander in the study area, in a drainage adjacent to and north of Rising Canyon (California Department of Fish and Game 2011).

In 2007, presence/absence surveys for the yellow-blotched salamander were systematically conducted in all suitable habitat within the TMV Planning Area using the same methods as for the Tehachapi slender salamander (Appendix E). A total of 17 yellow-blotched salamanders were observed in 16 drainage survey segments along or near Middle and Salcito ridges, in the vicinity of Monroe, Silver, Squirrel, and Palos Altos canyons and along Bear Trap Canyon and its tributaries (Jones & Stokes 2008). The surveys were conducted to determine presence/absence only and were not intended to census the population of yellow-blotched salamander on site. However, the results of the surveys suggest a fairly broad distribution of yellow-blotched salamanders across the TMV Planning Area.

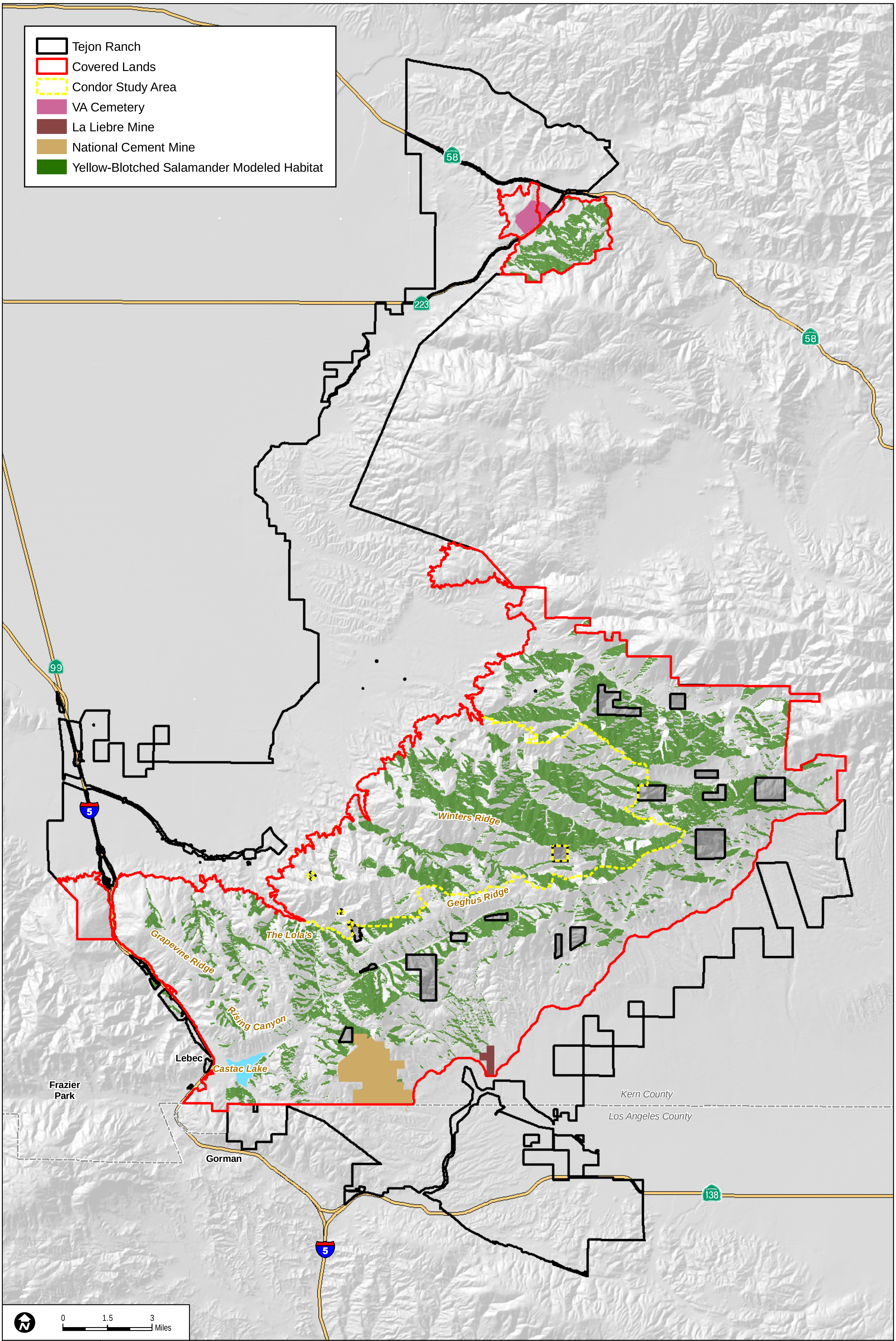
Modeled habitat for the yellow-blotched salamander in the study area includes all canopy with greater than 40% coverage on north-facing slopes at all elevations. Approximately 35,213 acres of modeled habitat for yellow-blotched salamander was identified and mapped (Figure 3.1-11). Because presence/absence survey results in the TMV Planning Area were positive in several locations and because the study area is within the range of this species, the yellow-blotched salamander is expected to be fairly widely distributed in suitable habitat across the study area.



SOURCE: USFWS 2011

FIGURE 3.1-10

Western Spadefoot Modeled Habitat



SOURCE: TRC 2007

FIGURE 3.1-11

Yellow-Blotched Salamander Modeled Habitat

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3.1.7.3 Birds

American Peregrine Falcon

Status and Distribution

Formerly federally and state-listed as endangered, the American peregrine falcon was federally delisted by the Service in 1999 (64 FR 46542–46558) and state delisted by the California Fish and Game Commission in August 2009 (California Fish and Game Commission 2009). However, the species remains a state fully protected species (California Department of Fish and Game 2011), and is also protected under the MBTA (16 U.S.C. Sections 703–712).

The peregrine falcon has a worldwide distribution that is more extensive than that of any other bird. The only regions this species does not occupy as a breeder are the Amazon Basin, Sahara Desert, Antarctica, and most of the steppes of central and eastern Asia. In North America, the three subspecies of peregrine falcon breed from Alaska to Labrador, southward to Baja California and other parts of northern Mexico, and east across central Arizona through Alabama. Its distribution is patchy in North America, and populations in the eastern United States are still chiefly in urban areas (American Ornithologists' Union 1998, White et al. 2002). The distribution is likely to change as the species reoccupies areas from which it was formerly extirpated (White et al. 2002). The former breeding range also included Ontario, southern Quebec, the Canadian Maritime Provinces, and all of the eastern United States south to northern Georgia. In the Americas, the species winters from southern Alaska to Tierra del Fuego in southernmost South America (American Ornithologists' Union 1998). The American peregrine falcon occurs from Alaska and western Canada (south of the tundra) through the Great Plains and the western United States to northern Mexico, except for the Pacific Northwest and various island chains west of Canada and south of Alaska (White et al. 2002).

The American peregrine falcon is an uncommon breeder or winter migrant throughout much of California, the western and southwestern regions of the United States, and northern Mexico (Zeiner et al. 1990a). In California, active nests have been documented along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern California. Wintering migrants can be seen inland throughout the Central Valley, in the western Sierra Nevada, along the coast, and occasionally on the Channel Islands (Zeiner et al. 1990a). Spring and fall migrants occur along the coast and in the western Sierra Nevada (Brown 2006). As a transient species, the American peregrine falcon may occur almost anywhere that suitable habitat is present (Garrett and Dunn 1981).

Habitat Characteristics and Use

The American peregrine falcon occurs near wetlands, lakes, rivers, or other waters and on cliffs, banks, dunes, mounds, and human-made structures (California Department of Fish and Game 2011). Peregrine falcons use a large variety of open habitats for foraging, including tundra, marshes, seacoasts, savannahs, grasslands, meadows, open woodlands, and agricultural areas. The high mobility, extensive hunting areas, remote nest sites, and preferences of the individual pairs make it difficult to identify what might be typical peregrine falcon habitat (U.S. Fish and Wildlife Service 1984a); no particular terrestrial biome appears to be preferred over others (White et al. 2002). However, the species is often observed near tall cliffs and near water sources (American Ornithologists' Union 1998, Brown 2006). Riparian areas, as well as coastal and inland wetlands, are important habitats year-round for this species. Protected cliffs and ledges are often used for cover

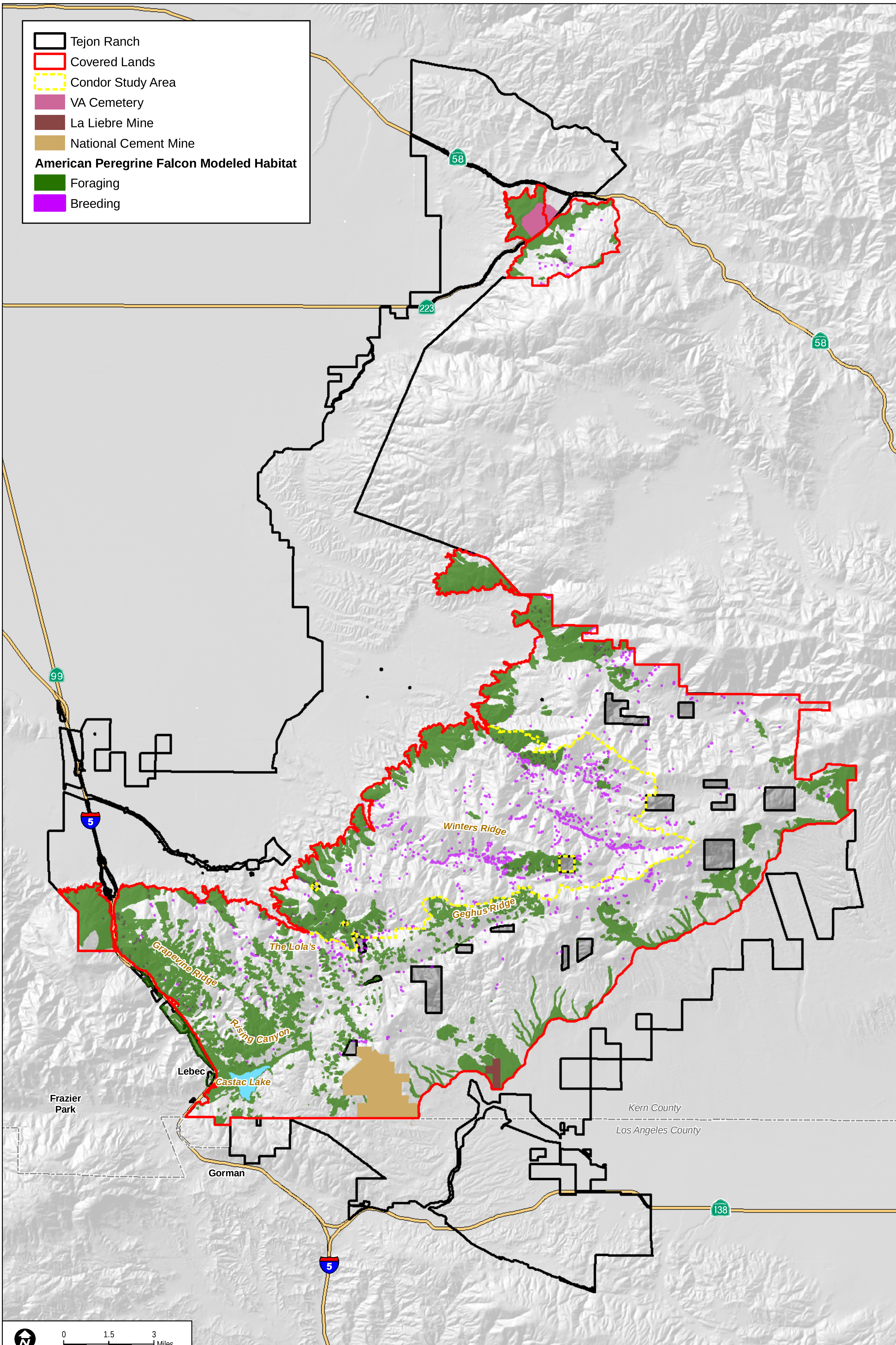
(Brown 2006, Zeiner et al. 1990a). Like many other migratory birds of prey, peregrine falcons often travel along mountain ridges on both eastern and western coastlines during migration. During migration, the peregrine falcon may be found near marshes, lakes, and ponds with high concentrations of waterfowl, shorebirds, and other birds. Within southern California, peregrine falcons are primarily found at coastal estuaries and inland oases (Garrett and Dunn 1981, Brown 2006).

Breeding requires cliffs or suitable surrogates that are close to preferred foraging areas. Nests are typically located on cliffs between 164 and 656 feet tall that are prominent in the landscape (White et al. 2002). Peregrine falcons have also been known to nest in trees and on small outcrops. Tall buildings, bridges, or other tall human-made structures are also suitable for nesting (White et al. 2002). The nest site usually provides a panoramic view of open country and often overlooks water. It is always associated with an abundance of avian prey, even in an urban setting. A cliff nest site may be used for many years (Brown 2006). The nest site itself, often referred to as an eyrie, usually consists of a rounded depression or scrape with accumulated debris that is occasionally lined with grass (Call 1978). Higher-quality nest sites confer greater protection from the elements and have greater breeding success (Olsen and Olsen 1989). On sandy coastal bluffs without cliffs in California, peregrine falcons use deserted raven (*Corvus corax*), cormorant, and red-tailed hawk nests (White et al. 2002).

Occurrence in the Study Area

A winter bird survey was conducted in November 2006, and focused surveys were conducted in all suitable/potential breeding habitat in 2007 within the TMV Planning Area and in the Castac Lake area to search for American peregrine falcon nests (Appendix E). Three American peregrine falcons were observed foraging at Castac Lake during the wintering bird survey in mid-November 2006 (Dudek 2007b). These observations occurred during the non-breeding season, and the three individuals were not observed displaying any nesting or courtship behavior. No other peregrine falcons were documented during the 2007 focused peregrine falcon survey or during the other spring bird surveys in 2007. Previous surveys conducted between 1999 and 2004 (Impact Sciences 2004) and 2005 (Jones & Stokes 2006) did not observe peregrine falcons, concluding that the species has potential to forage on site, but low potential to nest on site. This species is expected to only use the study area as a stopover during migration periods or possibly to be an occasional winter visitor because it has only been observed on one occasion in the study area. Further, the species is known to wander throughout its range during migration and winter periods, there are very few nesting records for this species in southern California, and there is limited potential breeding habitat (cliff faces) in the study area.

Foraging habitat was modeled in the study area at all elevations using several specific vegetation communities and land covers, including native and nonnative grassland, agriculture, riparian scrub, riparian wetland, desert wash/riparian/seeps, wash, wetland, and lake (Appendix D). Although the species has not been observed to nest in the study area, breeding habitat was also modeled. Breeding habitat was modeled as all steep cliff and bluff areas, defined as 50 degree slopes or greater (119% slopes or greater). A total of 26,742 acres of modeled foraging habitat and 80 acres of modeled breeding habitat for American peregrine falcon was identified and mapped in the study area (Figure 3.1-12).



SOURCE: TRC 2007

FIGURE 3.1-12

American Peregrine Falcon Modeled Habitat

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Bald Eagle

Status and Distribution

The bald eagle was initially federally listed on February 14, 1978, as an endangered species throughout the lower 48 states, except in Minnesota, Michigan, Wisconsin, Washington, and Oregon, where it was listed as a threatened species. On July 12, 1995, the Service announced the bald eagle would be reclassified from endangered to threatened in the lower 48 states, effective August 11, 1995 (60 FR 35999–36010). This species was delisted from the Federal list of threatened and endangered species on July 9, 2007 (U.S. Fish and Wildlife Service 2007a). The banning of the pesticide DDT and the habitat protection afforded by the Federal ESA for nesting sites and important feeding and roost sites precipitated the delisting (U.S. Fish and Wildlife Service 2007a). The bald eagle is still protected under the Bald and Golden Eagle Protection Act (BGEPA)(16 U.S.C. Sections 668–668d) and MBTA. The bald eagle remains listed as an endangered species in California and is fully protected in the state.

The bald eagle is the only sea eagle regularly occurring on the North American continent. Bald eagles breed locally from Alaska eastward to Newfoundland and southward locally to Baja California, Sonora, Texas, and Florida. The species winters in the large majority of the breeding range but generally withdraws from central Alaska and the central and northern portions of Canada (American Ornithologists' Union 1998). Individuals that breed in California may make only local winter movements in search of food.

Within mainland southern California, the species primarily winters at larger bodies of water in the lowlands and mountains (Garrett and Dunn 1981). It is fairly common as a local winter migrant at a few favored inland waters in southern California, with the largest numbers occurring at Big Bear Lake, Cachuma Lake, Lake Mathews, Nacimiento Reservoir, San Antonio Reservoir, and along the Colorado River (Zeiner et al. 1990a).

Despite its widespread distribution in North America, the bald eagle has significantly declined in the southern and eastern part of its range (NatureServe 2008). In California, breeding populations of bald eagles are now restricted mostly to Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties (Polite and Pratt 2005). This species remains susceptible to a number of threats, particularly environmental contaminants and excessive disturbance by humans. At the same time, recent rangewide growth in numbers and the protection offered by governments have buffered this decline (NatureServe 2008). According to the National Audubon Society, public and private protection of the bald eagle has increased populations from 417 active nests in the lower 48 states in 1963 to 4,450 in 1994 (60 FR 35999–36010). The winter population is estimated to exceed 20,000 individuals within the continental United States (Buehler 2000).

Habitat Characteristics and Use

Rangewide, bald eagles occur primarily at or near seacoasts, rivers, swamps, and large lakes (American Ornithologists' Union 1998). It is considered a bird of aquatic ecosystems, but within such areas, it must have an adequate food base, perching areas, and nesting sites to support it (Gerrard and Bortolotti 1988). The bald eagle nests in trees, rarely on cliff faces and ground nests in treeless areas, and always relatively close to water with suitable foraging opportunities. The actual distance to water varies within and among populations of the bald eagle. In some cases, the distance to water is not as critical as the quality of the foraging area. The quality of the foraging area is defined by the diversity, abundance, and vulnerability of the prey base, the structure of aquatic habitat (such as the presence of shallow water), and absence of human development and disturbance (Buehler 2000). Diurnal perch habitat is characterized by the presence of tall, easily accessible, often super-canopy trees adjacent to the shoreline foraging habitat. The perch tree species used by the bald eagle are highly variable, including both coniferous and deciduous species, if present. Most perch trees are live trees, although dead trees may be preferred, if available. The bald eagle selects a wider range of tree species and sizes for perching than for nesting or roosting (Buehler 2000).

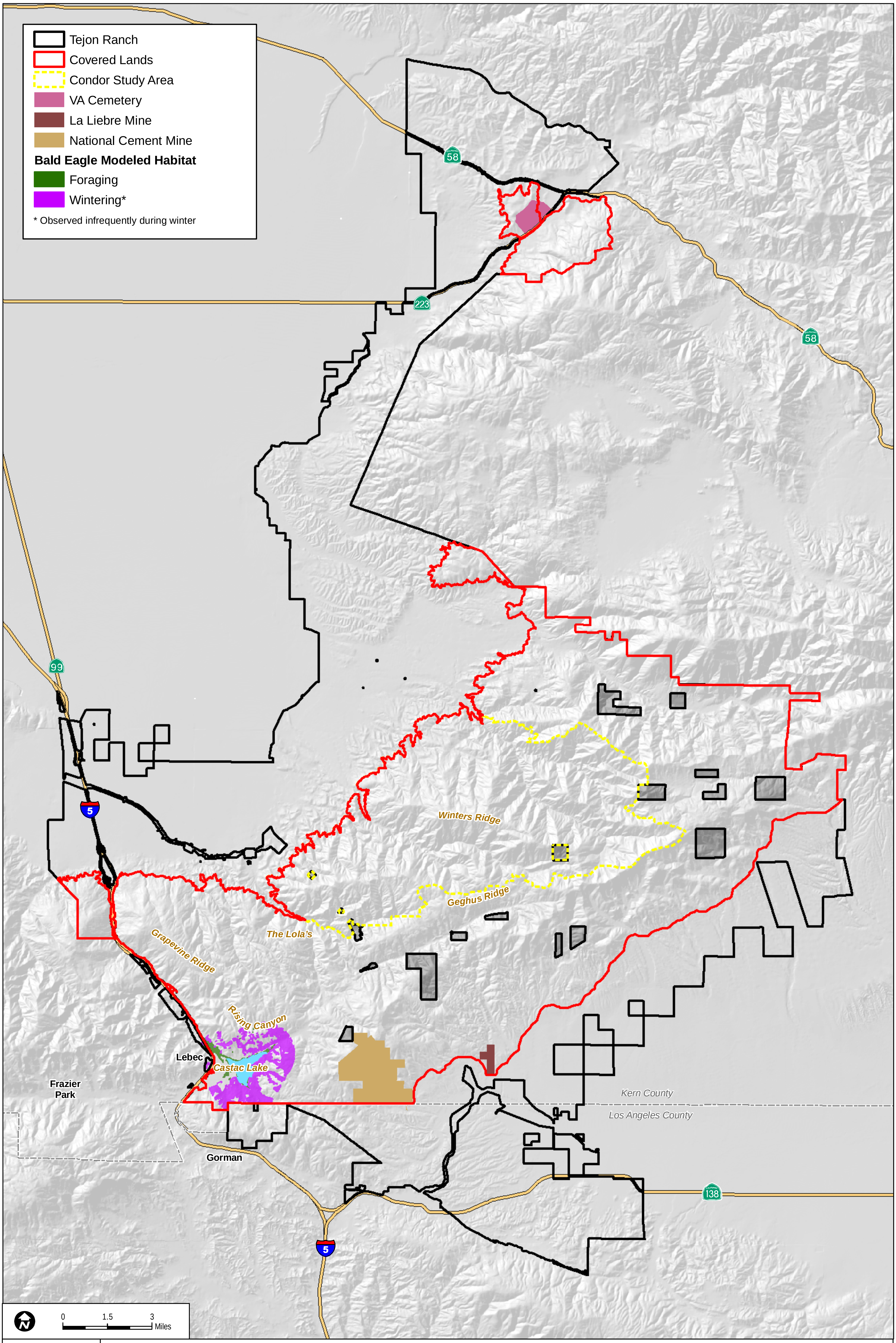
In winter, bald eagles often congregate at specific wintering sites that are generally close to open water and that offer good perch trees and night roosts. The bald eagle may roost communally in winter in dense, sheltered, remote conifer stands (Zeiner et al. 1990a). In Klamath National Forest, winter roosts were 10 to 12 miles from feeding areas (Spencer 1976). The bald eagle often congregates in large numbers on the wintering grounds. The winter habitat suitability is defined by food availability, the presence of roost sites that provide protection from inclement weather, and the absence of human disturbance, although bald eagles will tolerate some human activity in areas of high prey availability. The perching habitat during the wintering season is characterized by the presence of tall trees located adjacent to foraging areas similar to other times of the year (Buehler 2000).

Occurrence in the Study Area

Focused surveys were conducted in 2006 and 2007 in all suitable/potential breeding and wintering habitat in the TMV Planning Area and at Castac Lake to search for nests and winter roosts (Appendix E). These surveys resulted in irregular observations of the species during the winter. Bald eagles were observed in winter 2007 at Castac Lake, but no wintering congregations (dozens to hundreds of birds can constitute a wintering congregation [Buehler 2000]) were observed. In February 2007, a single individual was detected on two different days perching on the north side of Castac Lake. During other focused wildlife surveys in January 2008, a single adult and up to five immature bald eagles were also incidentally observed adjacent to Castac Lake. Nesting individuals were not detected in the TMV Planning Area in the spring and summer of 2007. Bald eagles were not observed in the study area during prior surveys between 1999 and 2004 (Impact Sciences 2004) and in 2005 (Jones & Stokes 2006). These survey data indicate that bald eagles use Castac Lake and the adjacent TMV Planning Area irregularly during the winter.

Locations have been noted recently in southern California as breeding attempts. However, based on the lack of observations of this species during the spring and summer, bald eagles have a low potential to occur in the TMV Planning Area as a breeding bird.

Bald eagles are not expected to occur in the study area other than in association with Castac Lake because of the lack of aquatic foraging habitat elsewhere in the study area. Modeled habitat for bald eagle in the study area includes foraging and winter roosting habitat at all elevations within 1 mile of Castac Lake (Appendix D). Modeled foraging habitat includes lake and wetland types, and modeled winter roosting habitat includes riparian woodland, oak woodlands, and oak savannahs. A total of 518 acres of modeled foraging habitat and 1,438 acres of modeled winter roosting habitat for bald eagles were identified and mapped (Figure 3.1-13). In general, bald eagles are only expected to occur at Castac Lake and no traditional wintering congregations of this species are expected to occur.



SOURCE: TRC 2007

FIGURE 3.1-13

Bald Eagle Modeled Habitat

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Burrowing Owl

Status and Distribution

The burrowing owl is not a federally or state-listed threatened or endangered species, but is a CDFG Species of Special Concern due to declining population levels, limited ranges, and/or continuing threats (California Department of Fish and Game 2011). The burrowing owl is also protected under the MBTA. In April 2003, Santa Clara Valley Audubon Society, the Center for Biological Diversity, Defenders of Wildlife, San Bernardino Valley Audubon Society, Tri-County Conservation League, and California State Park Rangers Association petitioned to list the western burrowing owl (*A. c. hypugea*) under the California Endangered Species Act (CESA); however, the petition was denied.

The burrowing owl is widespread in the United States and Canada, and south into Mexico and Central and South America. As many as 18 subspecies of burrowing owls are recognized, seven of which occur in North and Central America. Subspecies have not been evaluated using modern taxonomic techniques, but subspecies are generally geographically distinct and presumably isolated (Haug et al. 1993).

Burrowing owls in California belong to the western burrowing owl subspecies, whose historical breeding range extended from southwestern and south-central Canada southward through the Great Plains and western United States and south to central Mexico. In many parts of the United States, the western burrowing owl's breeding range has been reduced, and it has been extirpated from certain areas, including western Minnesota, eastern North Dakota, Nebraska, and Oklahoma (Bates 2006). The winter range is much the same as the breeding range, but the majority of western burrowing owls that breed in Canada and the northern United States are believed to migrate south during September and October and north from March into the first week of May. Therefore, individuals observed in southern portions of the range during the winter may include both resident and migratory individuals (Haug et al. 1993). The subspecies occurring in Florida and southern California are predominantly non-migratory (Thomsen 1971). The western burrowing owls in northern California are believed to migrate (Coulombe 1971).

Habitat Characteristics and Use

In California, western burrowing owls are yearlong residents of flat, open, dry grassland and desert habitats at lower elevations (Bates 2006). Burrowing owl nests in California have been observed at elevations from 200 feet below sea level at Death Valley up to 12,000 feet amsl at the Dana Plateau in Yosemite National Park (Bates 2006). They can inhabit annual and perennial grasslands and scrublands characterized by low-growing vegetation. They may be found in areas that include trees and shrubs if the cover is less than 30% (Bates 2006); however, they prefer treeless grasslands. Although burrowing owls prefer large, contiguous areas of treeless grasslands, they have also been known to occupy fallow agriculture fields, golf courses, cemeteries, road allowances, airports, vacant lots in residential areas and university campuses, and fairgrounds when nest burrows are present (Bates 2006, Haug et al. 1993). They typically require burrows made by fossorial mammals, such as the California ground squirrel. The availability of numerous small mammal burrows is a major factor in determining whether an area with apparently suitable habitat will support burrowing owls (Coulombe 1971). Burrowing owls rarely use areas unoccupied by colonies of burrowing mammals (Zarn 1974).

Occurrence in the Study Area

Surveys for burrowing owls were conducted using the CDFG protocol in 2007 in all suitable/potential breeding/foraging habitat in the TMV Planning Area (Appendix E). No burrows that showed evidence of use by burrowing owls were found on site. No breeding, resident, or wintering burrowing owls were detected on site during the focused surveys. One migrant burrowing owl was incidentally observed in October 2007 in the northern (lower elevation) portion of the TMV Planning Area during surveys for the California condor (Dudek 2009). Burrowing owls also were not detected during previous biological surveys of the TMV Planning Area (Impact Sciences 2004, Jones & Stokes 2006). Four CNDDB occurrences are recorded for burrowing owl approximately 3 miles east of Arvin, between the southern portion of the Tehachapi Uplands (San Joaquin Valley) side of the study area and the northern portion (California Department of Fish and Game 2011). These observations are found in the relatively flat grasslands (Dudek 2009).

The burrowing owl is considered to have a low potential to breed in the TMV Planning Area and elsewhere in the study area, based on negative protocol survey results for the TMV Planning Area and because its breeding range is typically at lower elevations than the study area. However, because the species was observed during the winter in the TMV Planning Area, there is potential for the species to occur in the study area during winter.

Although the burrowing owl is considered to have low potential to breed on site, primary breeding/foraging habitat and secondary breeding/foraging habitat were modeled at all elevations in the study area. Modeled primary breeding/foraging habitat included grassland and modeled secondary breeding/foraging habitat included agriculture and certain scrub communities (alluvial scrub, Mojavean scrub, saltbush/buckwheat scrub, and general scrub) (Appendix D). A total of 24,944 acres of modeled primary breeding and foraging habitat and 8,073 acres of modeled secondary breeding and foraging habitat for burrowing owls were identified and mapped in the study area (Figure 3.1-14).

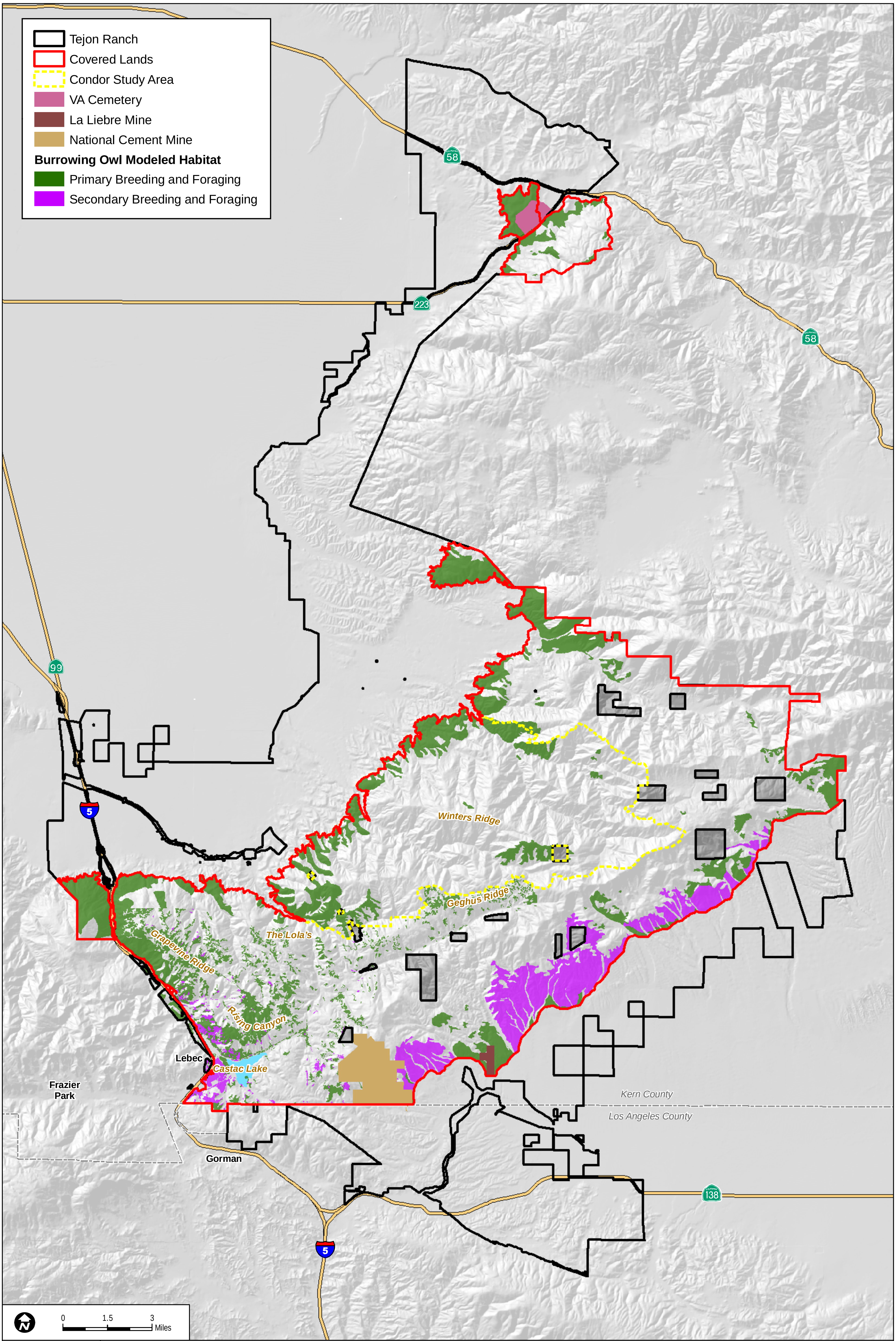
Golden Eagle

Status and Distribution

The golden eagle is a CDFG Species of Special Concern and is fully protected in the State of California (California Department of Fish and Game 2011). It is not federally listed, but is protected under both the BGEPA and the MBTA.

The golden eagle has a holarctic distribution (i.e., northern continents), extending as far south as north Africa, Arabia, and the Himalayas in the Old World, and Mexico in North America. It is a partial migrant within this distribution, with the northern breeding birds migrating south in winter while those of more temperate climates remain throughout the year (Brown and Amadon 1968). Golden eagles primarily occur in the western regions of North America and breed locally from Alaska southward to northern Baja California and northern Mexico and eastward to the western Great Plains. The species winters from southern Alaska and southern Canada southward through the breeding range (Johnsgard 1990).

This species is sparsely distributed throughout most of California, occupying primarily mountain, foothill, and desert habitats (Zeiner et al. 1990a). This pattern may be more common in southern California than in northern regions. The species ranges from sea level up to 11,500 feet amsl (Grinnell and Miller 1944). Golden eagles are mostly resident, but may move downslope for the



SOURCE: TRC 2007

FIGURE 3.1-14

Burrowing Owl Modeled Habitat

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winter or upslope after the breeding season. Some individuals migrate into California for the winter (Zeiner et al. 1990b). Although the golden eagle was formerly considered common in suitable habitats in California (Grinnell and Miller 1944), the species was more recently judged to be uncommon throughout much of California (Garrett and Dunn 1981). The golden eagle avoids settled areas and, therefore, has almost certainly declined in California within the past century due to loss of large, unfragmented habitat areas (Grinnell and Miller 1944).

Habitat Characteristics and Use

Rangewide, golden eagles occur in open country (e.g., tundra, open coniferous forest, desert, and barren areas), especially in hills and mountainous regions (American Ornithologists' Union 1998). Golden eagles typically are not found in heavily forested areas or on the immediate coast and are almost never detected in urbanized environments (Grinnell and Miller 1944, Garrett and Dunn 1981). The golden eagle-preferred territory sites have a favorable nest site, a dependable food supply, and broad expanses of open country for foraging. Hilly or mountainous country that provides updrafts that facilitate takeoff and soaring are occupied more than flat habitats (Johnsgard 1990). In the interior central Coast Ranges of California, golden eagles are often found in open grasslands and oak savannah, but also occupy oak woodland and open shrublands (Hunt et al. 1998). Within southern California, the species prefers grasslands, brushlands (coastal sage scrub and sparse chaparral), deserts, oak savannahs, open coniferous forests, and montane valleys (Garrett and Dunn 1981).

Nesting of the golden eagle is primarily restricted to rugged, mountainous country with canyons and escarpments (Garrett and Dunn 1981, Johnsgard 1990, Call 1978). Secluded cliffs with overhanging ledges and large trees are used for nest sites (Zeiner et al. 1990a). There is a high frequency of nest locations on granite cliffs. Approximately 85% of all nest areas overlook, or are on the opposite side of, the ridge from large valleys or areas of relatively low topographic heterogeneity and open vegetation (Scott 1985). Most nests are located on cliffs or trees near forest edges or in small stands near open fields (Bruce et al. 1982, Hunt et al. 1995, 1998). Nest locations tend to be more closely associated with topographic heterogeneity than with a particular vegetation type (Call 1978). Some nests occur in Douglas-fir (*Pseudotsuga menziesii*), pine, or other large trees (McGahan 1968), such as several species of oak, foothill pine (*Pinus sabianiana* and *P. coulteri*), California bay laurel (*Umbellularia californica*), eucalyptus (*Eucalyptus* spp.), and western sycamore (*Plantanus racemosa*) (Hunt et al. 1998).

The golden eagle needs a broad expanse of open country for hunting, including grasslands, deserts, savannahs, and early successional stages of forest and shrub habitats (Johnsgard 1990). Foraging takes place over large areas of open chaparral or coastal sage scrub as well. In parts of Idaho, golden eagles have been shown to select areas with abundant and large shrub patches, which provide preferential jackrabbit habitat (Marzluff et al. 1997).

Occurrence in the Study Area

The golden eagle has been regularly observed in the TMV Planning Area since 1999 and is a documented breeding resident on site (Impact Sciences 2004; Jones & Stokes 2006; Dudek 2009). Between 2006 and 2008, golden eagles were documented in the TMV Planning Area in and around Silver, Short, and Bear Trap canyons and on Geghus, Skinner, and Squirrel ridges (Dudek 2009). Three active nest sites were observed during surveys in 2005 (Jones & Stokes 2006) and in 2007 (Dudek 2009). In 2007, all three nests were located in large oak trees in canyon live oak woodlands and forests: one overlooking Rising Canyon, west of the gas line easement and south of the main road through Rising Canyon; one in a drainage northwest of Squirrel Canyon; and one near the TMV Planning Area's southeastern boundary, south of Poleline Ridge and overlooking an unnamed canyon (Dudek 2009). In addition, one inactive golden eagle nest that had been active in the 2005 surveys was observed in 2007 in Rising Canyon. Many of the observations of golden eagles foraging, perching, and flying were concentrated around the active nest sites, especially the nests near Rising and Squirrel Canyons. In some instances, juveniles were documented far from the three active nest sites (no other nests were discovered), suggesting that these juveniles had fledged from one of the three active nests (either in 2007 or previous years) and flown to other areas.

Modeled habitat for golden eagles in the study area includes primary breeding (oak woodland, riparian woodland), breeding/foraging (oak savannahs), and foraging habitat (agriculture, grassland, scrub, and wash) at all elevations (Appendix D). A total of 48,019 acres of modeled primary breeding habitat, 33,056 acres of modeled breeding/foraging habitat, and 33,891 acres of modeled foraging habitat for golden eagle occur in the study area (Figure 3.1-15).

Least Bell's Vireo

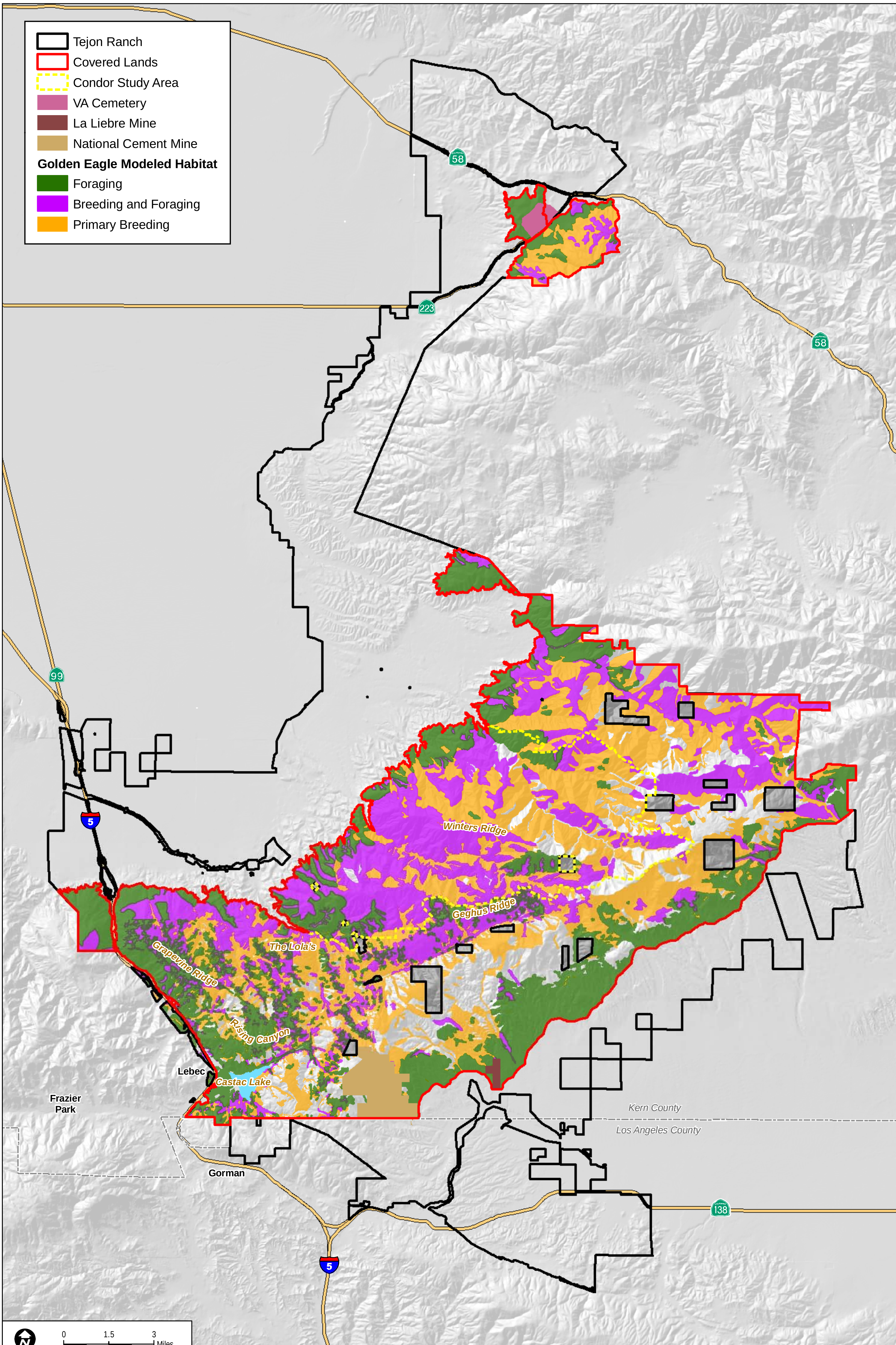
Status and Distribution

The least Bell's vireo was state-listed as endangered in 1980 and federally listed as endangered by the Service in 1986 (51 FR 16474). The Service made a final critical habitat designation in 1994 (59 FR 4845) covering approximately 38,000 acres at 10 locations in six counties in southern California: Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego (59 FR 4845). There are no critical habitat designations within or adjacent to the study area. The species is also protected under the MBTA.

Breeding populations of the least Bell's vireo are endemic to California and northern Baja California, where it occurred in valley bottom riparian habitats from Tehama County, California, to northwestern Baja California in the south, and as far east as the Owens Valley, Death Valley, and along the Mojave River (Grinnell and Miller 1944). It was a common and widespread summer resident below about 2,000 feet amsl in the western Sierra Nevada, throughout the Sacramento and San Joaquin Valleys, and in the coastal valleys and foothills from Santa Clara County south (Zeiner et al. 1990a). It also was common in coastal southern California from Santa Barbara County south, below about 4,000 feet amsl east of the Sierra Nevada, in Owens and Benton Valleys, along the Mojave River and other streams at the western edge of southeastern deserts, and along the entire length of the Colorado River (Grinnell and Miller 1944). Except for a few outlying pairs, the subspecies is currently restricted to southern California from south of the Tehachapi Mountains to northwestern Baja California (Garrett and Dunn 1981). Bell's vireos (subspecies uncertain) also breed in at least two sites along the Amargosa River near Tecopa, Inyo County (Garrett and Dunn 1981). The winter range of the full species Bell's vireo includes Mexico and Honduras (Brown 1993).

Habitat Characteristics and Use

The least Bell's vireo primarily occupies riverine riparian habitats characterized by southern willow scrub, cottonwood forest, mule fat scrub, sycamore alluvial woodland, coast live oak riparian forest, arroyo willow riparian forest, wild blackberry, or mesquite in desert localities (U.S. Fish and Wildlife Service 1998). It uses habitat that is limited to the immediate vicinity of watercourses below 1,500 feet amsl elevation in the interior (51 FR 16474, Small 1994). In the coastal portions of southern California, the least Bell's vireo occurs in willows (*Salix* spp.) and other low, dense valley foothill riparian habitat and lower portions of canyons and along the western edge of the deserts in desert



SOURCE: TRC 2007

FIGURE 3.1-15

Golden Eagle Modeled Habitat

riparian habitat (Zeiner et al. 1990a). It tends to establish territories on sites with a particular early successional habitat configuration that typically features dense cover within 3 to 6 feet of the ground and a dense, stratified canopy (U.S. Fish and Wildlife Service 1998). Vireo nest sites are most frequently located in stands between 5 and 10 years of age (Regional Environmental Consultants 1988). In addition, the width of the vegetation belt appears to be important for establishing vireo territories. Native upland buffers are particularly important in narrow drainages; pairs selecting areas bordered by coastal sage scrub and grasslands are more successful at fledging young than those nesting in areas bordered by agricultural and urban areas (Franzreb 1989).

During the spring and fall migrations, the Bell's vireo occupies a wider range of habitats, including coastal sage scrub, riparian, and woodland habitats (Brown 1993). The portion of the winter range of Bell's vireo along the west coast of north and central Mexico includes thornscrub vegetation adjacent to watercourses or riparian gallery forests (Brown 1993). In southern Mexico and Honduras, tropical deciduous forest and arid tropical scrub along the coast are used (Brown 1993).

Occurrence in the Study Area

Surveys using Service protocol methods were conducted in 2007 for least Bell's vireo in all suitable breeding habitat within the TMV Planning Area (Appendix E). These surveys were negative, and the potential for least Bell's vireo to nest or forage in the TMV Planning Area is considered to be low (Dudek 2009). Least Bell's vireos were also not observed in the TMV Planning Area during protocol surveys in 2005 (Jones & Stokes 2006).

Modeled breeding/foraging habitat for the least Bell's vireo includes riparian scrub, riparian woodland, oak riparian, riparian/wetland, and wash between 2,000 and 4,100 feet amsl (Appendix D). Available data, however, did not allow identification of vegetation structure (e.g., low, dense riparian habitat typical of the species) within individual polygons. A total of 614 acres of modeled breeding/foraging habitat for least Bell's vireo was identified and mapped (Figure 3.1-16), although the potential for the species to nest or forage in the study area is considered to be low.

Little Willow Flycatcher

Status and Distribution

The little willow flycatcher is not federally listed; however, the full species of the willow flycatcher (*Empidonax traillii*), including the little willow flycatcher subspecies, was listed as state endangered in 1991 (California Department of Fish and Game 2000a). The species is also protected under the MBTA.

The little willow flycatcher breeds in California from Tulare County north along the western side of the Sierra Nevada and the Cascades, extending to the coast in northern California. It is a rare to locally uncommon summer resident from 1,969 to 8,005 feet amsl and a common spring (mid May to early June) and fall (mid August to early September) migrant at lower elevations throughout the state, exclusive of the north coast (Zeiner et al. 1990a). Most of the remaining breeding populations occur in isolated mountain meadows of the Sierra Nevada and the Cascades (Sanders and Flett 1989).

The known breeding territories of the little willow flycatcher include 23 to 36 territories in Sierra County (Perazzo Meadow/Little Truckee River/Lacey Valley area), which have been stable since 1982; five territories observed in 1997 at Red Lake (in Alpine County); and a possible breeding population along the Klamath River (Craig and Williams 1998). In addition, 72 little willow flycatchers were noted in McCloud (Siskiyou County) in 1997 and 42 little willow flycatchers were observed in Warner Creek Valley (Plumas County) in 1997 (Craig and Williams 1998). None of these territories are in or near the study area, and all are outside of Kern County. Based on the current knowledge of the species, the entire breeding range of the little willow flycatcher is located outside of the study area.

The full species willow flycatcher winters in Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Colombia, and into South America (Sedgwick 2000).

Habitat Characteristics and Use

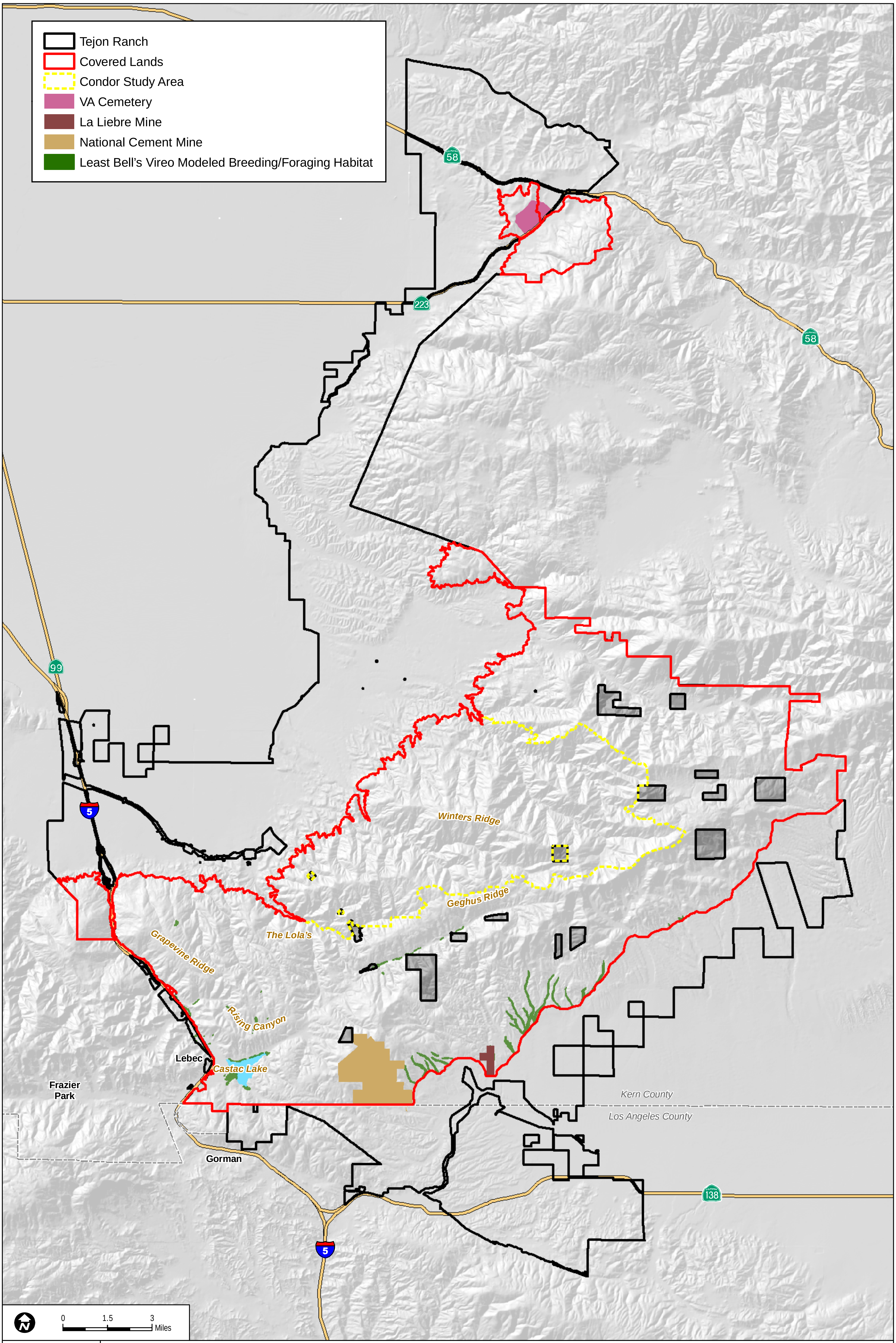
In California, habitat associations of the little willow flycatcher in the central and southern Sierra Nevada are riparian, willow dominated vegetation (Grinnell and Miller 1944, Gaines 1988). Habitat use in these regions typically includes moist meadows with perennial streams and smaller spring fed or boggy areas with willow or alder (*Alnus* spp.) (Craig and Williams 1998). Little willow flycatchers have also been found in other riparian environments of various types and sizes, ranging from small willow surrounded lakes or ponds with a fringe of meadow or grassland to various willow lined streams, grasslands, or boggy areas (Craig and Williams 1998). Although non-shrub trees do not appear to be a required habitat component, little willow flycatchers will use scattered trees for singing and foraging perches, and females will use the foliage of trees as gleaning substrate during the nesting period (Sanders and Flett 1989). Habitat edge, in the form of openings within thickets of riparian deciduous shrubs, appears to be an important component of little willow flycatcher habitat (Sanders and Flett 1989).

Migrant willow flycatchers may occur in non-riparian habitats, and/or may be found in riparian habitat patches that are otherwise unsuitable for breeding.

Occurrence in the Study Area

Surveys using Service protocol methods were conducted in 2007 in all suitable or potential foraging habitat within the TMV Planning Area (Appendix E). Several foraging willow flycatchers were observed during the first two protocol survey periods in 2007, but foraging willow flycatchers were absent during the third protocol survey period. These foraging observations were in willow-dominated riparian areas adjacent to Castac Lake, near Cuddy Creek, in Beartrap Canyon, in Rising Canyon, and along Grapevine Creek (Dudek 2009). Because these willow flycatchers were only observed during the first two surveys and not during the third survey, it was concluded that they were most likely migrant little willow flycatchers. Willow flycatchers were also observed several times during protocol surveys in 2005 (Jones & Stokes 2006). Because no willow flycatchers were found during follow-up visits, it was assumed that these birds were migrants as well. Impact Sciences, Inc. (2004) made similar observations during surveys conducted in 2003. To date, no willow flycatchers have been reported nesting in the TMV Planning Area.

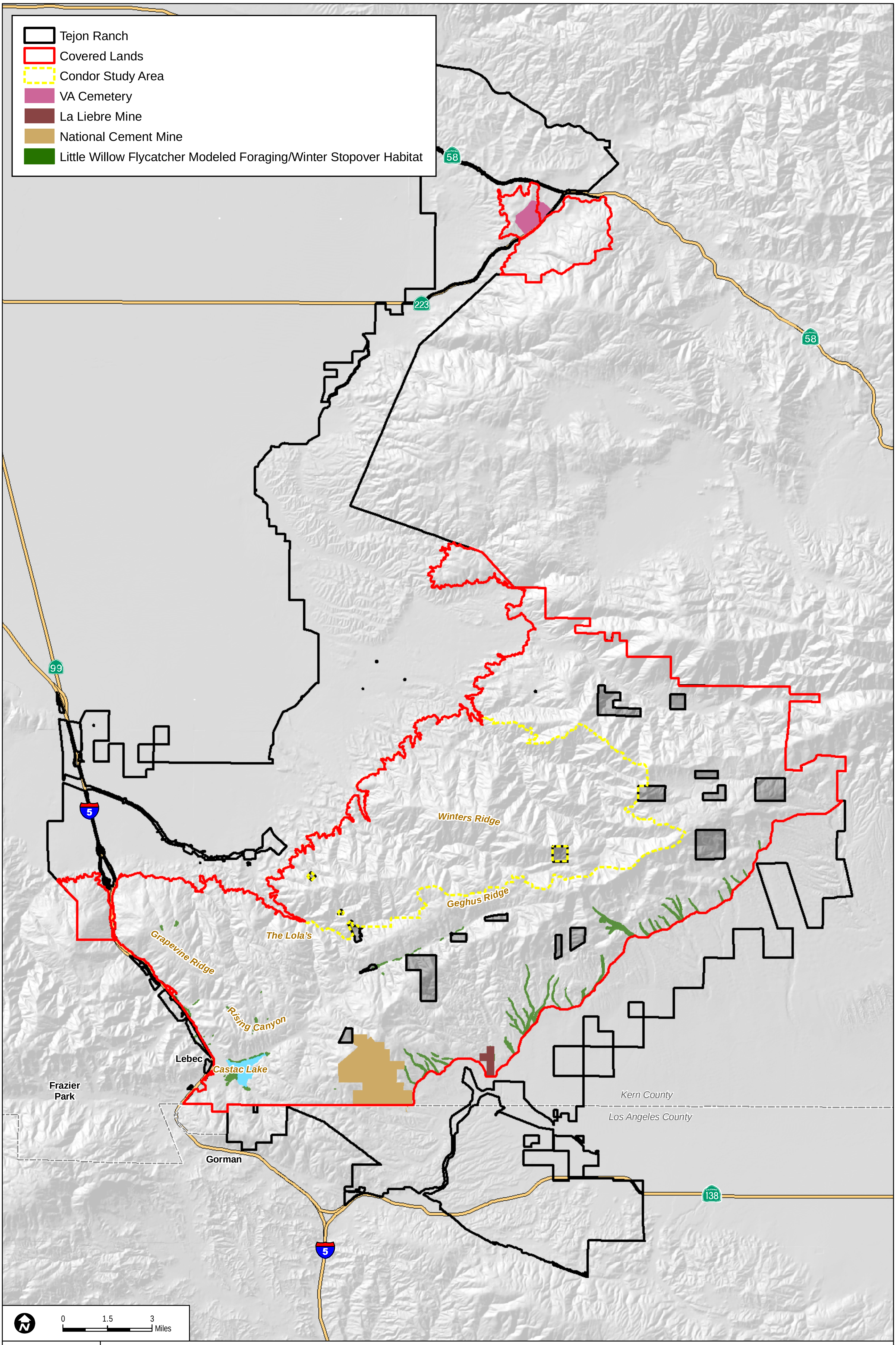
Modeled habitat for the little willow flycatcher in the study area includes foraging/winter stopover habitat (riparian scrub, riparian woodland, riparian/wetland, and wash) at all elevations (Appendix D). A total of 986 acres of modeled foraging/winter stopover habitat for little willow flycatcher was identified and mapped (Figure 3.1-17). Based on the positive results of the 2007 protocol surveys in the TMV Planning Area for migrant little willow flycatchers, there is a high potential for this subspecies to use foraging habitat for stopover in the study area.



SOURCE: TRC 2007

FIGURE 3.1-16

Least Bell's Vireo Modeled Habitat



SOURCE: TRC 2007

FIGURE 3.1-17

Little Willow Flycatcher Modeled Habitat

Purple Martin

Status and Distribution

The purple martin is not federally listed; however, it is a CDFG Species of Special Concern (California Department of Fish and Game 2011) and is protected under the MBTA.

The purple martin breeds locally from British Columbia in a disjunct pattern eastward to Nova Scotia, southward to Baja California, central Mexico, and the Gulf Coast. Although the species' winter range is not well known, the species primarily winters (presumably) in Amazonia and south-central Brazil. There are no documented winter records of purple martins for anywhere in North or Central America (American Ornithologists' Union 1998).

In California, the purple martin is an uncommon to rare local summer resident in a variety of wooded habitats throughout the state; it is a rare migrant in spring and fall and is absent in the winter (Zeiner et al. 1990a). In the north, it is an uncommon to rare local breeder on the coast and inland (McCaskie et al. 1979). The purple martin's breeding range extends east to Modoc and Lassen counties (Airola 1980), but is absent from the higher slopes of the Sierra Nevada. It is also absent from the higher desert regions, except as a rare migrant, and from the Central Valley, with the exception of several urban localities where the species nests in seep holes under freeway overpasses in the Sacramento area (Airola and Grantham 2003). In the south, it is now only a rare and local breeder on the coast and in interior mountain ranges, with few breeding localities (Garrett and Dunn 1981). The current estimated population in California is 900 to 1,350 pairs (Airola and Williams 2008). The Tehachapi Mountains support 100 to 200 pairs and may be the one remaining area in California where purple martins regularly nest in oak woodland (Airola and Williams 2008). In 1982, the southern Tejon Ranch/Grapevine area supported between approximately 40 and 100 pairs of purple martins (Airola and Williams 2008).

Habitat Characteristics and Use

During migration, the purple martin can be found flying over and foraging in a variety of habitat types, including grassland, wet meadow, and fresh emergent wetland, usually near water (American Ornithologists' Union 1998). It typically breeds in tall sycamores, conifers (such as closed-cone pine or cypress, ponderosa pine [*Pinus ponderosa*], Douglas-fir, and redwood [*Sequoia sempervirens*]) and other large trees in or near oak woodlands or open coniferous forest. Suitable breeding habitat is characterized by old-growth, multi-layered, open forest and woodland with snags (Garrett and Dunn 1981). Purple martin nests in cavities constructed by other bird species in tall, old trees near a body of water, and occasionally in residential areas. It forages over riparian areas, forest, and woodland. Premigratory roost sites are generally situated in stands of trees or underneath concrete bridges (Brown 1997).

Occurrence in the Study Area

In 2000, Williams (2002) reported 50 pairs of purple martins nesting in large valley oak trees in the Tehachapi Mountains, suggesting that this area may be a particularly important remaining breeding site for the species. In 2005, surveys conducted by Jones & Stokes reported six purple martin breeding locations in the northwest corner of the TMV Planning Area (Jones & Stokes 2006). Breeding sites were in large valley oak trees and consisted of individual nests or multiple nests within the same or adjacent trees (Jones & Stokes 2006). In 2007, surveys for purple martin were conducted in conjunction with the special-status raptor surveys (Appendix E). Five to ten pairs of purple martin were observed in the TMV Planning Area during 2007 surveys, including breeding observations from near Monroe Canyon, east of Rising Canyon, and west of Geghus Ridge; foraging observations were made in those locations as well as near Silver and Squirrel Canyons. Active breeding nests were observed in crevices or holes in standing trees in oak woodland or oak savannah communities (Dudek 2007b, Tejon Ranch Company 2007). Purple martin was also observed foraging in grassland, oak savannah, and oak woodlands (Dudek 2009). In 2010, members of the Tejon Ranch Conservancy, Audubon California, and Western Field Ornithologists conducted surveys within the study area at several locations including Tunis, Winters, Middle, and Cordon Ridges. At least 23 pairs of purple martins were detected during this survey, all in large valley oak trees (Western Field Ornithologists 2011).

Based on survey results, the purple martin appears to be relatively widespread in the oak woodland and oak savannah communities in the study area. Old, mature trees with cavities or broken tops are generally required for use by purple martins, so the species' distribution within these communities may be restricted by the extent of mature or decadent oak trees, particularly valley oak trees, in the study area.

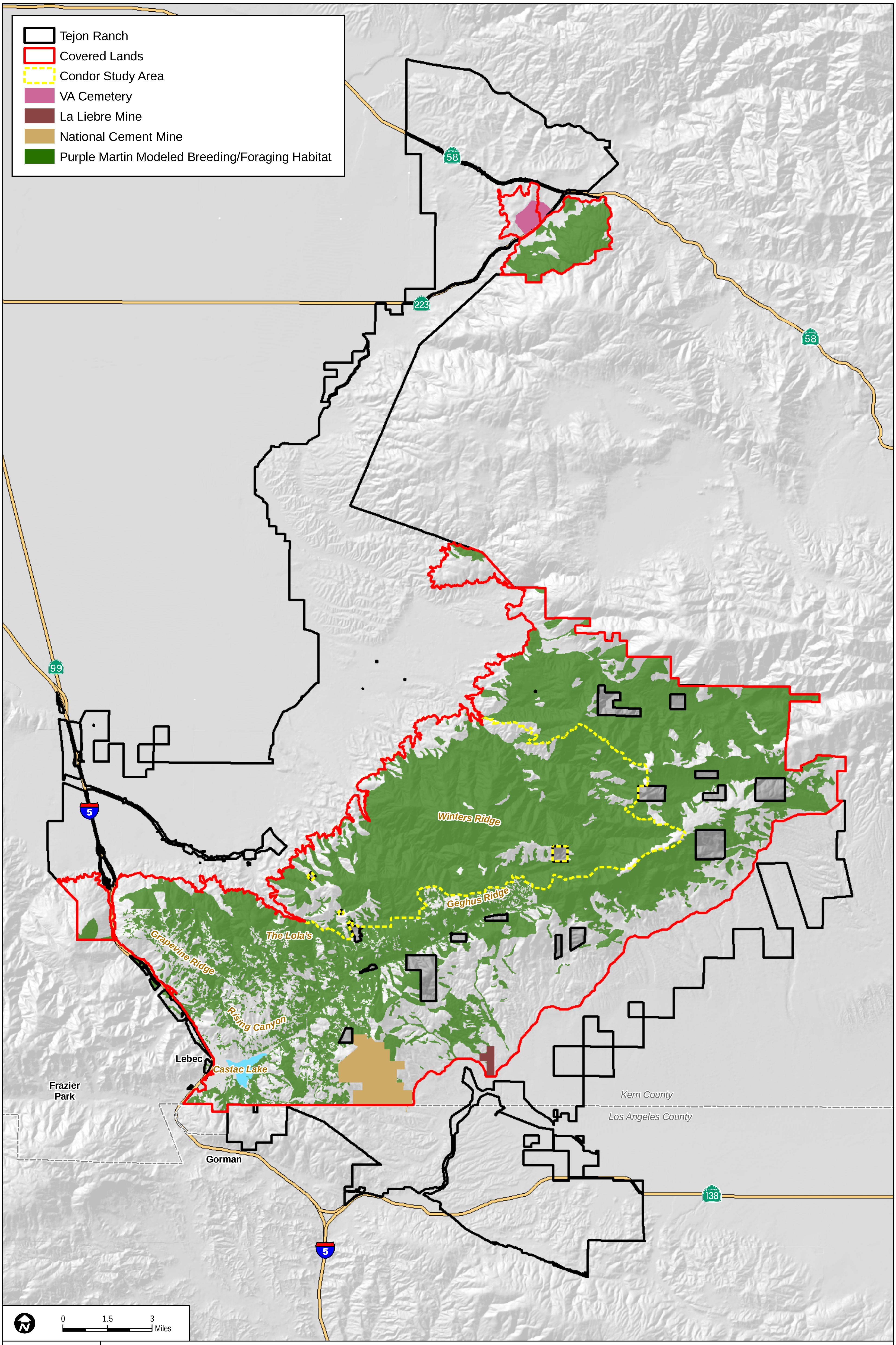
All reported detections of purple martins in the study area have been in valley oak trees in oak savannah or woodland habitat. While the species is known to use riparian habitat, the focused surveys conducted for other riparian birds (least Bell's vireo, willow flycatcher, and western yellow-billed cuckoo) would likely have resulted in detections of purple martin if this species was nesting in riparian habitats in the TMV Planning Area. As such, modeled habitat in the study area (Appendix D) focused on woodland breeding/foraging habitats at all elevations, including conifers, oak riparian woodlands, oak and buckeye woodlands, and oak savannahs. A total of 85,870 acres of modeled breeding/foraging habitat for the purple martin was identified and mapped (Figure 3.1-18).

Southwestern Willow Flycatcher

Status and Distribution

The southwestern willow flycatcher (*Empidonax traillii extimus*) was listed as an endangered species by the Service in 1995 (60 FR 10694–10715). The full species of the willow flycatcher (*Empidonax traillii*), including the southwestern willow flycatcher, was listed as state endangered by CDFG in 1991 (California Department of Fish and Game 2000a). The species is also protected under MBTA. In 2005, the Service designated portions of 100-year floodplains in southern California, southern Nevada, southwestern Utah, south central Colorado, New Mexico, and Arizona as critical habitat for the southwestern willow flycatcher; portions of Kern, Santa Barbara, San Bernardino, and San Diego counties are included in this designation (70 FR 39227–39231). On August 15, 2011, the Service published a proposed rule in the *Federal Register* to revise critical habitat for the southwestern willow flycatcher (76 FR 50542-50629). Portions of Kern and Los Angeles counties are included in this proposed designation. However, none of the critical habitat previously designated in 2005, nor any of the proposed critical habitat in the recent rule, overlaps with or is adjacent to the study area.

The southwestern willow flycatcher has a breeding distribution in seven states: Arizona, New Mexico, California, southwestern Colorado, extreme southern portions of Nevada and Utah, and western Texas (U.S. Fish and Wildlife Service 2002). The breeding distribution of the southwestern willow flycatcher in California extends from the Mexican border north to Independence in the



SOURCE: TRC 2007

FIGURE 3.1-18

Purple Martin Modeled Habitat

Owens Valley, the South Fork Kern River, and the Santa Ynez River in Santa Barbara County (Craig and Williams 1998).

The migration routes and overwintering destinations of the southwestern willow flycatcher are not well understood (U.S. Fish and Wildlife Service 2002). It most likely winters in Mexico, Central America, and northern South America (U.S. Fish and Wildlife Service 2002). Wintering habitats are generally humid to semiarid, in partially open areas that are typically near a wetland (U.S. Fish and Wildlife Service 2002).

Habitat Characteristics and Use

Breeding habitat for the southwestern willow flycatcher is restricted to riparian woodlands along streams and rivers with mature, dense stands of willows or cottonwoods, or smaller spring-fed or boggy areas with willows or alders (Sedgwick and Knopf 1992). This species breeds in relatively dense riparian habitats in all or parts of the seven southwestern states noted above. Riparian vegetation provides both breeding and foraging habitat for the species.

The vegetation at nest sites for southwestern willow flycatcher is typically even-aged, structurally homogeneous, and dense (Brown 1988, Whitfield 1990, Sedgwick and Knopf 1992). Southwestern willow flycatchers usually nest approximately 6.5 to 23 feet above ground in the upright fork of a tree or shrub (U.S. Fish and Wildlife Service 2002), but occasionally nest on horizontal limbs within trees and shrubs (Terres 1980). Historically, the southwestern willow flycatcher has nested primarily in willows and mule fat (*Baccharis salicifolia*) with a scattered overstory of cottonwoods (Grinnell and Miller 1944). Given changes in riparian plant communities, the southwestern willow flycatcher will nest in willows where available but in New Mexico and Arizona, the willow flycatcher has been known to nest in thickets dominated by tamarisk (*Tamarix* spp.) and Russian olive (*Elaeagnus angustifolia*) (Hubbard 1987, Brown 1988). Habitats that are not selected for either nesting or singing by southwestern willow flycatcher include riparian zones characterized by greater distances between willow patches and individual willows (Sedgwick and Knopf 1992). Nesting southwestern willow flycatchers invariably prefer areas with surface water nearby (Phillips et al. 1966). Suitable southwestern willow flycatcher habitat is less likely to occur in areas that cannot support dense riparian vegetation, such as steep, confined streams found in narrow canyons (U.S. Fish and Wildlife Service 2002). Suitable flycatcher habitat is more likely to develop in more extensive patches along lower gradient streams (U.S. Fish and Wildlife Service 2002).

Occurrence in the Study Area

Surveys using Service protocol methods were conducted in 2007 for the southwestern willow flycatcher in all suitable nesting habitat in the TMV Planning Area (Appendix E). As described above, it was concluded that the migrant willow flycatchers observed on site were the little willow flycatcher subspecies. No southwestern willow flycatchers were observed on site, and to date, no southwestern willow flycatchers have been observed nesting in the TMV Planning Area. There are no CNDDB occurrences for the species in the study area (California Department of Fish and Game 2011).

Modeled breeding/foraging habitat for the southwestern willow flycatcher in the study area includes riparian scrub, riparian woodland, riparian/wetland, and wash at all elevations (Appendix D). A total of 986 acres of modeled breeding/foraging habitat for southwestern willow flycatcher was identified and mapped (Figure 3.1-19). However as described above, the potential for southwestern willow flycatcher to nest or forage in the study area is considered low.

Tricolored Blackbird

Status and Distribution

The tricolored blackbird is a CDFG Species of Special Concern (California Department of Fish and Game 2011). The species was petitioned for Federal listing in 2004; however, the Service determined the species did not warrant protection in December 2006 (71 FR 70483–70492). The species is protected under the MBTA.

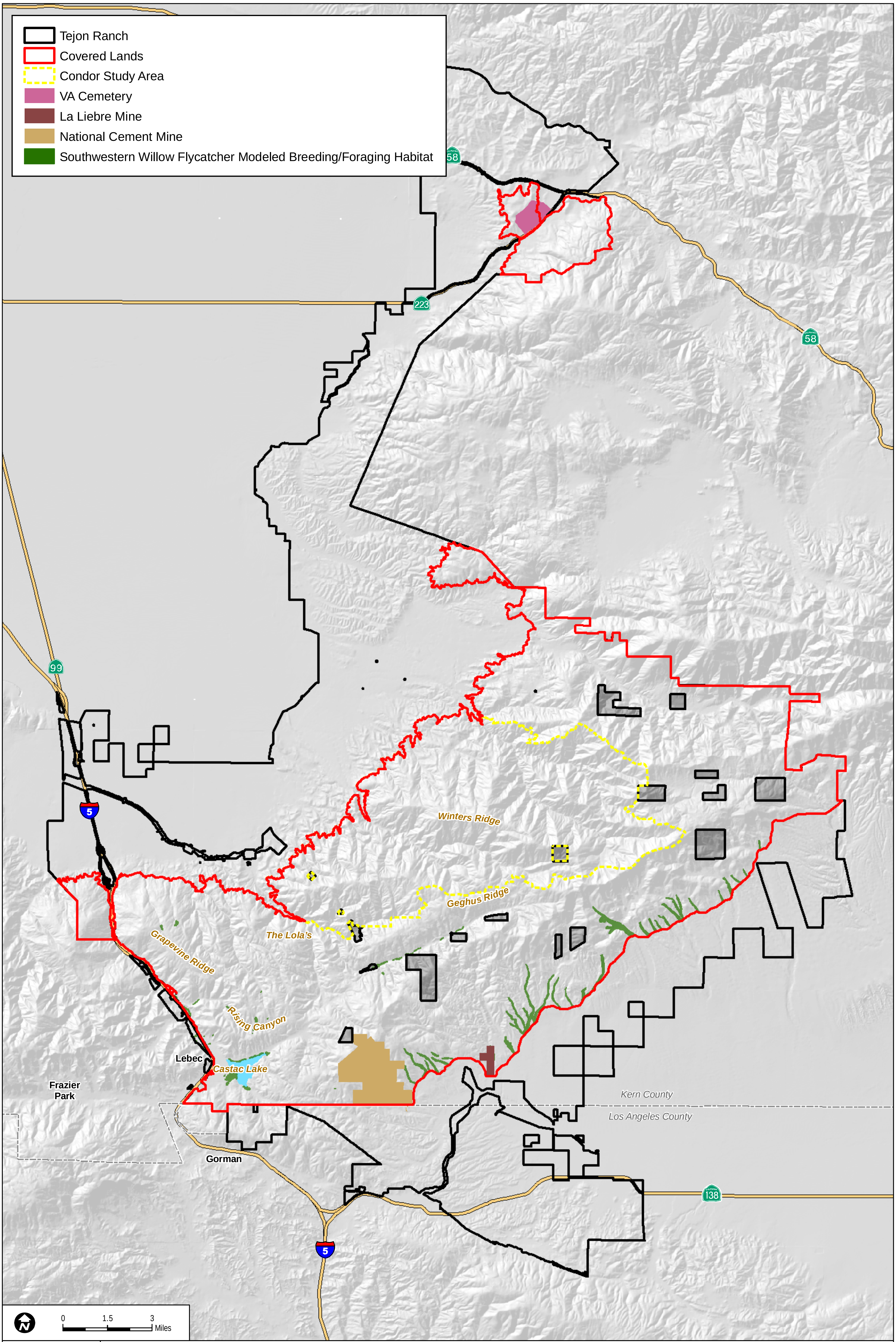
The tricolored blackbird is nearly endemic, with the vast majority (99% of the population) of species occurring in California and pockets of occupation in southern Oregon and Baja California, Mexico (Beedy and Hamilton 1999). The breeding range in California and Baja California extends from the Modoc Plateau of northeastern California, south through the lowlands of California west of the Sierra Nevada to northwestern Baja (Beedy and Hamilton 1999). The species is not migratory but is nomadic and highly colonial, although the nomadic pattern is poorly known (Orians 1960). Large flocks appear suddenly in areas from which they have been absent for months, breed, and then quickly withdraw.

Populations in California generally inhabit the same area throughout the year and do not need additional wintering sites, but most populations have been restricted to the Central Valley and surrounding foothills, coastal areas, and some inland localities in southern California. Since 1980, active breeding colonies have been observed in 26 California counties, and most of the largest colonies are in the Central Valley (Beedy and Hamilton 1999). Within California, the tricolored blackbird breeds locally west of the Cascade Range, Sierra Nevada, and southeastern deserts from Humboldt and Shasta counties south to extreme southwest San Bernardino County, western Riverside County, and western and southern San Diego County. In central California, breeding extends east into the foothills of the Sierra Nevada. The species also breeds in the marshes of Klamath Basin in Siskiyou and Modoc counties and Honey Lake Basin in Lassen County (Beedy and Hamilton 1999). It is a summer resident in northeastern California, occurring regularly only at Tule Lake, but has bred in some years as far south as Honey Lake and in the marshes of the Klamath Basin in Siskiyou and Modoc counties (Zeiner et al. 1990a). In the southern deserts, it is found regularly only at Antelope Valley, Los Angeles County. In winter, it becomes more widespread along the central coast and in the San Francisco Bay area (Beedy and Hamilton 1999, Garrett and Dunn 1981).

The tricolored blackbird is not migratory over most of its range, but leaves Oregon, northeastern California, Santa Barbara County, and eastern San Diego County in fall and winter, presumably migrating south (Zeiner et al. 1990a, Beedy and Hamilton 1999). Flocks of the species become nomadic in fall, seeking food (Zeiner et al. 1990a). In winter, flocks become more widespread from Marin to Santa Cruz Counties and in the Sacramento River Delta (Zeiner et al. 1990a).

Habitat Characteristics and Use

The tricolored blackbird forms the largest colonies of any North American passerine bird, with some breeding colonies attracting thousands of birds to a single site. These colonies require nearby water, a suitable nesting substrate, and open-range foraging habitat composed of grassland, woodland, or agricultural cropland. In winter, they often form single-species, and sometimes single-sex, flocks, but they also flock with other blackbird species. They frequently change their nesting locations from year to year, which may be an adaptation to exploit rapidly changing environments in ephemeral



SOURCE: TRC 2007

FIGURE 3.1-19

Southwestern Willow Flycatcher Modeled Habitat

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habitats, to provide secure nesting sites, and to provide plentiful insect food supplies (Beedy and Hamilton 1999).

The tricolored blackbird typically breeds in freshwater marshes with dense growths of emergent vegetation dominated by cattails (*Typha* spp.) or bulrushes (*Schoenoplectus* spp.), but the species also has established colonies in willows, blackberries (*Rubus* spp.), thistles (*Cirsium* and *Centaurea* spp.), and nettles (*Urtica* sp.). Although true marsh habitat with its growth of cattails and tules is favored, marshes are not necessary for nesting; the species may nest in other protective vegetation, including shrubs (Neff 1937), and recent breeding habitat has included diverse upland and agricultural areas. Many colonies have been reported in Himalayan blackberries (*Rubus discolor*). Some of the largest colonies are in silage and grainfields in the San Joaquin Valley. Other nesting substrates include giant reed (*Arundo donax*), safflower (*Carthamus tinctorius*), black mustard (*Brassica nigra*), stinging nettles (*Urtica dioica*), tamarisk, riparian scrublands and forests (e.g., willows, Fremont cottonwood, California ash [*Fraxinus latifolia*], and mule fat), desert olive (*Forestiera neomexicana*) groves, and spiny field plants, such as wheat (*Triticum* spp.), barley (*Hordeum* spp.), and thistles. Dairies and feedlots are components of many tricolored blackbird breeding habitats. Nests are constructed of grasses, reeds, and cattails.

In the Central Valley, colonies generally occur in the rice lands of the Sacramento Valley and pasture lands of the lower Sacramento Valley and San Joaquin Valley. Colonies outside the Central Valley occur in several different habitat types, including those surrounded by chaparral-covered hills, sagebrush grasslands (which may extend for miles), orchard, or those adjacent to salt marsh (DeHaven et al. 1975).

The tricolored blackbird forages in open habitat, including grassland, woodland, or agricultural cropland (Beedy and Hamilton 1999).

Occurrence in the Study Area

Focused surveys were conducted for tricolored blackbird in 2007 in all suitable breeding habitat in the TMV Planning Area (Appendix E). A small colony numbering approximately 15 individuals was observed nesting and foraging in May 2007 in the southwestern portion of the TMV Planning Area along the southern edge of Castac Lake (Dudek 2009). No nesting behavior was observed during subsequent surveys in June 2007 (Dudek 2009). Small numbers of tricolored blackbird were observed in 1999, 2000, 2001, 2003, and 2004 around Castac Lake and once in a marshy area at the upper end of Rising Canyon (Impact Sciences 2004). Tricolored blackbird was also observed in 2005 in the northwest corner of Castac Lake and may have been nesting on site; the number of birds observed was not reported (Jones & Stokes 2006).

Modeled breeding habitat for tricolored blackbird in the study area includes wetland and riparian wetland types up to 4,000 feet amsl; modeled foraging habitat includes agriculture, grassland, riparian scrub, riparian woodland, and wash (Appendix D). A total of 18,553 acres of modeled foraging habitat and 289 acres of modeled breeding habitat (all associated with Castac Lake) for tricolored blackbird was identified and mapped (Figure 3.1-20). The tricolored blackbird is known to breed at Castac Lake, but because of the absence of modeled breeding habitat elsewhere in the study area, the potential for breeding in the study area outside of the TMV Planning Area is considered to be very low.

Western Yellow-Billed Cuckoo

Status and Distribution

The western yellow-billed cuckoo was state-listed as endangered in 1988. In July 2001, the Service found that the federal listing of yellow-billed cuckoo was warranted, but precluded by higher priority listing actions (66 FR 38611-38626). As such, this subspecies is a candidate for Federal listing. It is also protected under the MBTA.

The western yellow-billed cuckoo summers and nests from interior California east to New Brunswick, and sporadically southward to southern Mexico. The species presumably migrates throughout much of North America and winters primarily from northern to central South America (American Ornithologists' Union 1998).

The species breeds throughout the eastern United States, and the western subspecies nests locally in scattered locations throughout California, including along the Colorado River (Gaines 1977a); in the Sacramento and Owens Valleys; along the South Fork of the Kern River, Kern County; along the Santa Ana River, Riverside County; and along the Amargosa River, Inyo and San Bernardino counties (Zeiner et al. 1990a).

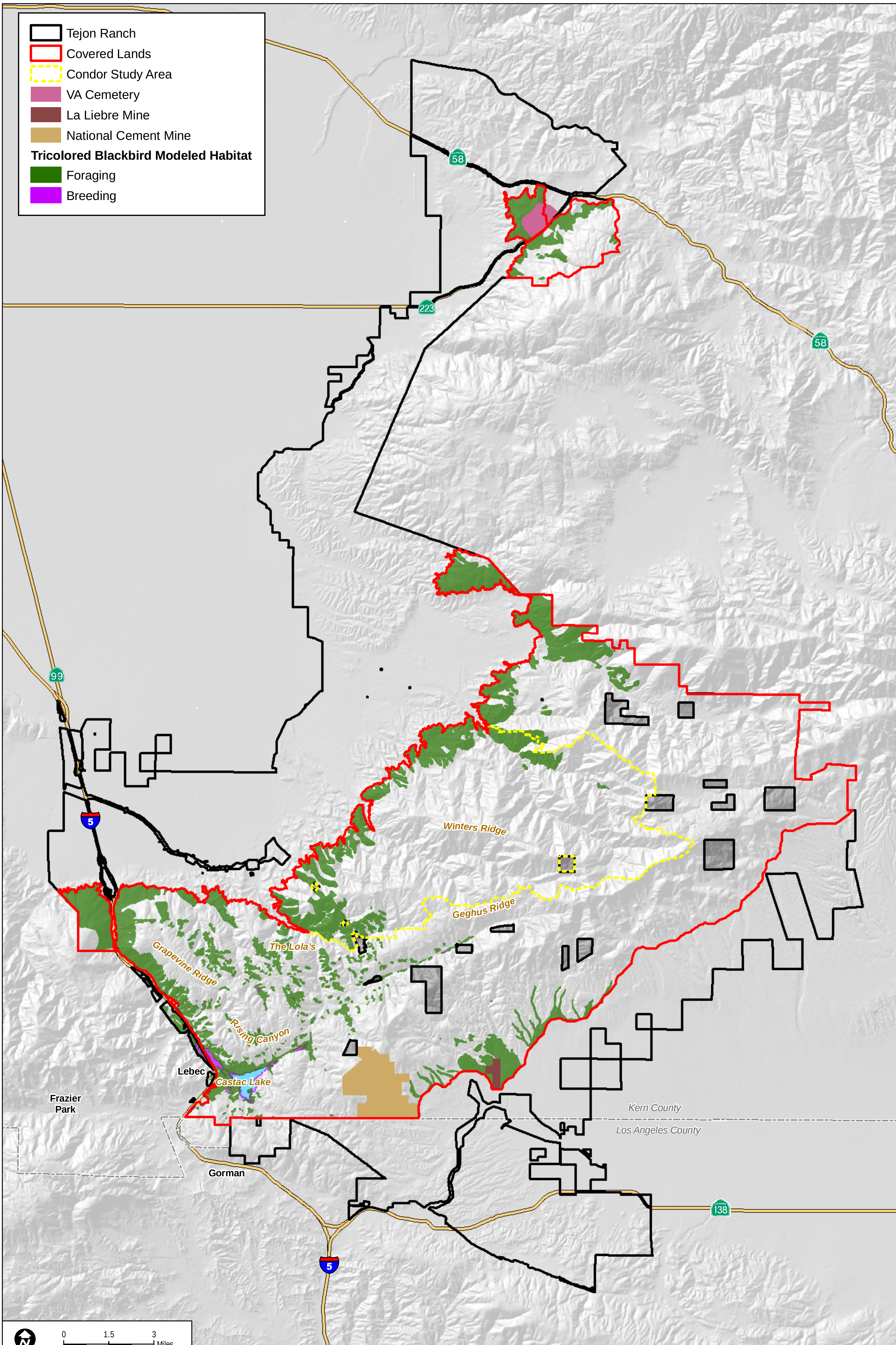
Habitat Characteristics and Use

The western yellow-billed cuckoo nests in a variety of habitats, including open woodland, parks, and riparian woodland (American Ornithologists' Union 1998). The western yellow-billed cuckoo subspecies in California requires dense, wide riparian woodlands with well-developed understories for breeding (Garrett and Dunn 19811). During breeding, the western yellow-billed cuckoo is restricted to river bottoms and other mesic habitats where humidity is high and where the dense understory abuts slow-moving watercourses, backwaters, or seeps (Zeiner et al. 1990a). Willow is almost always a dominant component of the vegetation. However, western yellow-billed cuckoos have been observed in mesquite thickets along the Colorado River and orchards in the Sacramento Valley (Zeiner et al. 1990a).

Occurrence in the Study Area

A focused survey was conducted for western yellow-billed cuckoo in 2007 in all suitable nesting habitat within the TMV Planning Area (Appendix E). Focused surveys for the western yellow-billed cuckoo in the TMV Planning Area in 2007 were negative (Dudek 2009). This species also was not observed in previous surveys of the study area, including during protocol surveys conducted in 2005 for the southwestern willow flycatcher and least Bell's vireo (Impact Sciences 2004, Jones & Stokes 2006).

Modeled breeding/foraging habitat for the western yellow-billed cuckoo in the study area includes riparian scrub, riparian woodland, riparian/wetland, and wash habitats at all elevations (Appendix D). Based on vegetation communities alone, a total of 986 acres of modeled breeding/foraging habitat for western yellow-billed cuckoo was identified and mapped (Figure 3.1-21). Vegetation mapping for the TMV Planning Area, however, did not identify areas with appropriate patch size or configuration likely to support breeding territories. Combined with the apparent lack of suitable habitat, the negative survey results in the TMV Planning Area, and the overall rarity of the species, the potential for the western yellow-billed cuckoo to nest or forage in the study area is very low.



SOURCE: TRC 2007

FIGURE 3.1-20

Tricolored Blackbird Modeled Habitat

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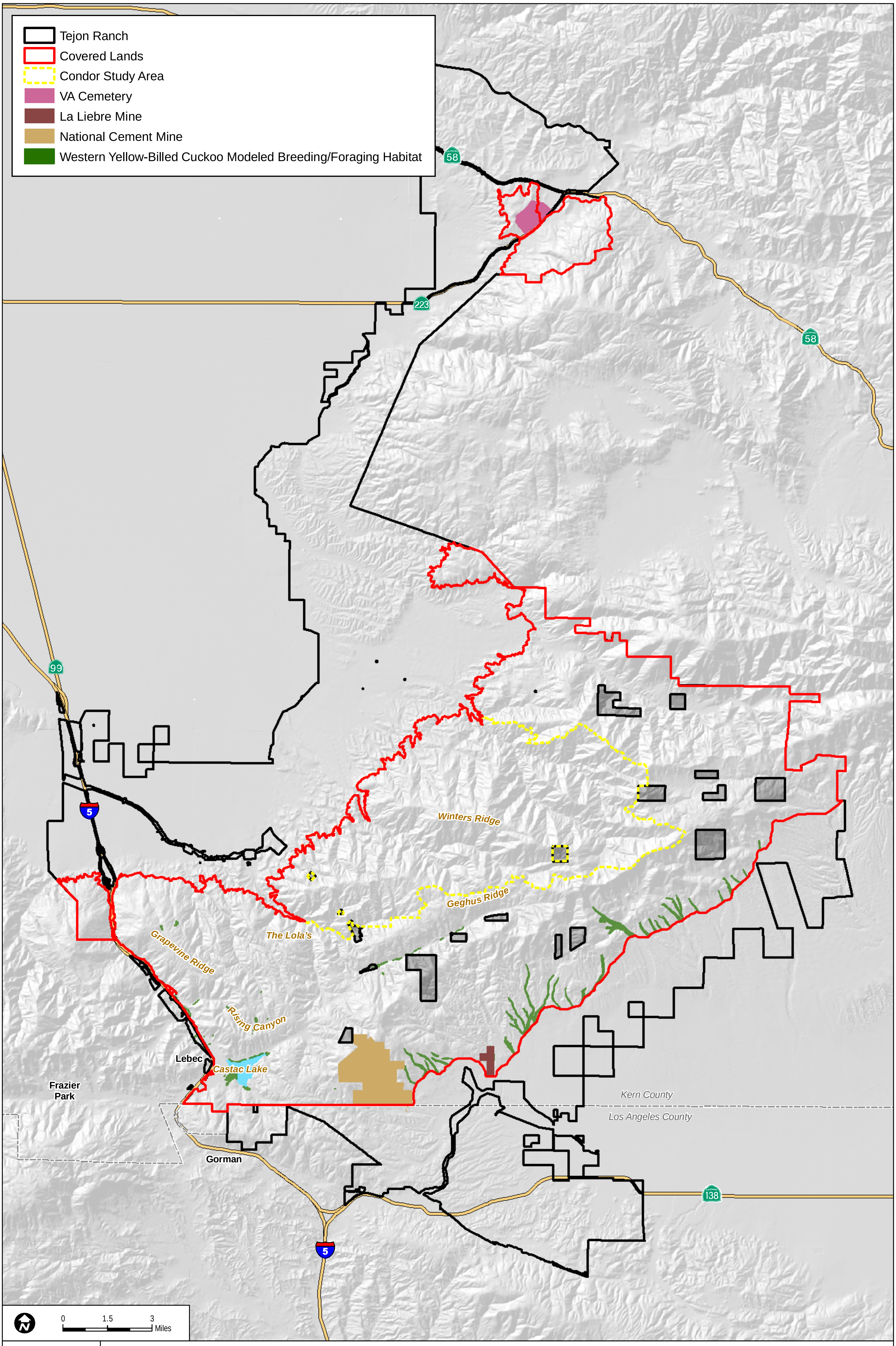

SOURCE: TRC 2007

FIGURE 3.1-21

Western Yellow-Billed Cuckoo Modeled Habitat

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White-Tailed Kite

Status and Distribution

The white-tailed kite is not federally listed, but is protected under the MBTA. It is a state fully protected species (California Department of Fish and Game 2011).

Prior to the 1960s, the white-tailed kite occurred in low numbers across much of its range. Population decreases appeared to be common during this time, especially in Mexico and Central America; however, since 1960, the population status and range of this raptor in North America have improved markedly, with the species expanding its range in the United States from small portions of California, Texas, and Florida to Oregon and Washington as well as into the middle portions of North America (Eisenmann 1971). The white-tailed kite has also rapidly colonized habitats throughout much of Central America in previously uninhabitable regions (Eisenmann 1971).

The breeding range stronghold for the white-tailed kite in North America is California, with nearly all areas up to the western Sierra Nevada foothills and southeastern deserts occupied (Small 1994, Dunk 1995). Breeding has also been documented regularly in the far west counties of Oregon and recently in southwest Washington. This species is a common breeder in southern Texas and in southern Florida, where a small breeding population has been established since at least 1986, with scattered reports elsewhere in the peninsula and in the eastern panhandle (Dunk 1995). This species' breeding range continues south along the coast of Mexico into Central America and in South America from Colombia south to the north coast of Argentina (Dunk 1995).

The white-tailed kite is a common to uncommon year-long resident in coastal and valley lowlands, rarely found away from agricultural areas (Grinnell and Miller 1944). The white-tailed kite inhabits herbaceous and open stages of moist habitats, mostly in cismontane California. It has extended its range and increased its numbers in California in recent decades (Eisenmann 1971).

The white-tailed kite is a very uncommon to fairly common winter visitor to western Oregon, particularly along the coast and interior valleys, and a rare winter visitor to the western edge of the Great Basin (Dunk 1995). Although apparently a resident bird throughout most of its breeding range, dispersal occurs during the non-breeding season, resulting in some range expansion during the winter. The white-tailed kite is believed to become nomadic during low abundance of California voles, and its population changes in a regular and predictable fashion in response to changes in the vole population. Dunk and Cooper (1994) found these nomadic responses to constitute a migration movement, although others have concluded that the white-tailed kite is apparently not migratory.

Habitat Characteristics and Use

The white-tailed kite inhabits low-elevation, open grasslands, savannahs, agricultural areas, wetlands, and oak woodlands. White-tailed kites breed in coastal and valley lowlands, especially near agricultural areas, and are uncommon in areas with extensive winter freezes (Moore 2000). In addition, riparian areas adjacent to open areas are typically used for nesting (Dunk 1995). The white-tailed kite uses trees with dense canopies for cover. Specific plant associations seem to be unimportant, with vegetation structure and prey abundance apparently more important (Dunk 1995). In California's Sacramento valley, the kite has increased predominantly in irrigated agricultural areas where the California vole occurs (Warner and Rudd 1975). In southern California, white-tailed kite also roosts in salt grass (*Distichlis spicata*) and Bermuda grass (*Cynodon dactylon*). The species uses herbaceous lowlands with variable tree growth, shrubs, sparse chaparral, and almost any upland with sparse cover of shrubs to grassland with a dense population of voles (Waian and Stendell 1970). Substantial groves of dense, broad-leaved deciduous trees are used by white-tailed kite for nesting and roosting (Brown and Amadon 1968).

The winter habitat for the white-tailed kite is generally similar to the breeding habitat, but the proximity to nest trees is not as important during winter months. Ungrazed areas tend to be used more than grazed lands in the winter. Communal roosts in the fall and winter are generally in small stands of trees but have been observed in open fields on the ground and in orchards. Specific plant associations are not important for roost sites (Dunk 1995).

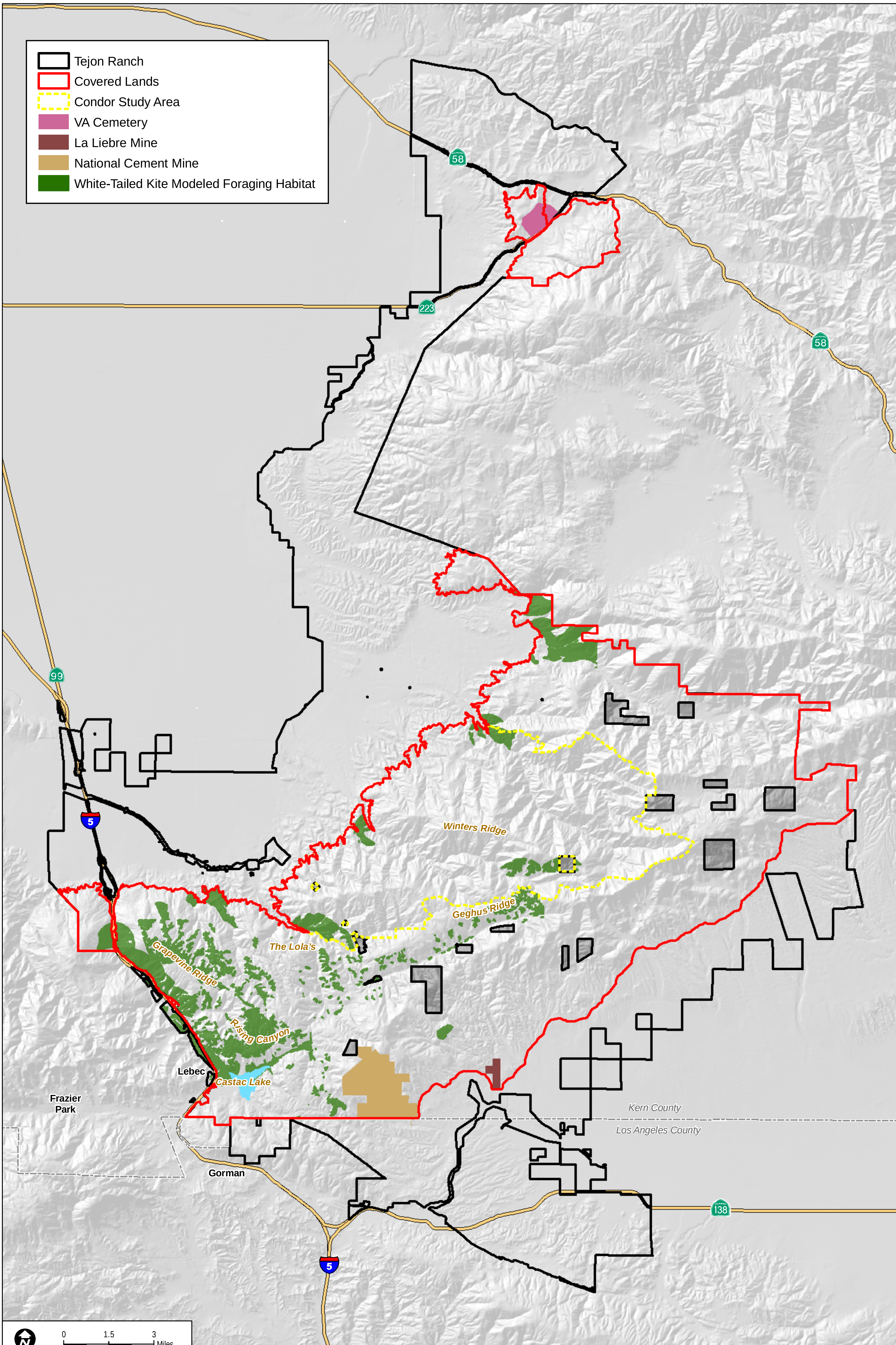
Occurrence in the Study Area

A focused survey for the white-tailed kite was conducted in 2007 in potential nesting habitat in the TMV Planning Area as part of the nesting raptor surveys (Appendix E). The surveys focused on oak woodlands, but chaparral was also surveyed by roads to supplement the oak woodland surveys. No nest sites were detected during the focused nesting surveys for raptors nor during the riparian birds surveys in 2005 and 2007, where, if present, nesting white-tailed kite would likely have been observed. In addition, no immature kites have been observed in the TMV Planning Area, indicating that nesting and breeding likely do not occur in the study area (Dudek 2009).

Single white-tailed kites have been observed foraging in the TMV Planning Area on several occasions during various surveys (Dudek 2009). These foraging observations have been in grasslands, agricultural areas, and wetland habitats adjacent to Castac Lake, and along Grapevine Creek (Dudek 2009, Tejon Ranch Company 2007). The white-tailed kite was also observed in spring 2005, but the specific location of the observation was not reported nor was a nest detected (Jones & Stokes 2006). The white tailed kite was not reported during surveys between 1999 and 2004 (Impact Sciences. 2004).

Because the white-tailed kite has been observed foraging in the TMV Planning Area on several occasions, there is a high potential for this species to forage in the study area. However, the white-tailed kite is considered to have a low potential to nest in the study area, which is just east of its published breeding range (Polite and Pratt 2005) and at a higher elevation than areas commonly used by this species.

Modeled foraging habitat for white-tailed kite in the study area includes agriculture, grassland, and wetland habitat types (Appendix D) and is based on the year-round elevational range map for the white-tailed kite from the California Wildlife Habitat Relationships System (California Department of Fish and Game 2007a). A total of 9,009 acres of modeled foraging habitat for white-tailed kite was identified and mapped in the study area (Figure 3.1-22). Although the habitat elements for nesting are present in the TMV Planning Area (i.e., riparian woodlands, oak woodlands, and savannahs), nesting habitat was not modeled because the study area is located east of the published year-round range for the species, because the 2007 nesting survey was negative, and because only a few individuals have been observed foraging on site.



SOURCE: TRC 2007

FIGURE 3.1-22

White-Tailed Kite Modeled Habitat

Yellow Warbler

Status and Distribution

The yellow warbler (*Setophaga [Dendroica] petechia brewsteri*) is not federally listed, but is protected under the MBTA. It is a CDFG Species of Special Concern (California Department of Fish and Game 2011).

The yellow warbler nests from northern Alaska eastward to Newfoundland and southward to northern Baja California and Georgia. It is a migrant throughout much of North America and winters from southern California, Arizona, and the Gulf Coast southward to central South America (American Ornithologists' Union 1998). In California, the yellow warbler is an uncommon to common summer resident in the north and is locally common in the south (Zeiner et al. 1990a). It breeds in riparian woodlands southward from the northern border of the state generally west of the Sierra Nevada to the coastal slopes of southern California, and from coastal and desert lowlands up to 8,000 feet amsl in the Sierra Nevada and other montane chaparral and forest habitats (Lowther et al. 1999).

Habitat Characteristics and Use

The yellow warbler in southern California breeds in lowland and foothill riparian woodlands dominated by cottonwoods, alders, willows, and other small trees and shrubs typical of low, open-canopy riparian woodland (Garrett and Dunn 1981). The yellow warbler also breeds in montane chaparral, open ponderosa pine, and mixed conifer habitats with substantial amounts of brush (Zeiner et al. 1990a). Breeding in montane habitats is perhaps a recent phenomenon (Gaines 1977b). Breeding territories often include tall trees for singing and foraging and a heavy brush understory for nesting (Lowther et al. 1999).

During migration, yellow warblers occur in lowland and foothill woodland habitats such as desert oases, riparian woodlands, oak woodlands, mixed deciduous-coniferous woodlands, suburban and urban gardens and parks, groves of exotic trees, farmyard windbreaks, and orchards (Small 1994). They usually arrive in California in April and generally migrate out of the area by October. Small numbers regularly overwinter in the southern California lowlands (Garrett and Dunn 1981).

Occurrence in the Study Area

In association with focused surveys for riparian birds and general avian surveys for upland birds, surveys were conducted for the yellow warbler in 2007 in all suitable breeding habitat in the TMV Planning Area (Appendix E). Yellow warblers were observed in 2007 in the southwestern and central portions of the TMV Planning Area, near Castac Lake and along Bear Trap Canyon during the breeding season (Dudek 2009). Five territories were recorded in the TMV Planning Area based on presence of singing males. Yellow warblers were also observed at similar locations in the TMV Planning Area in 2003 (Impact Sciences 2004) and 2005 (Jones & Stokes 2006). Impact Sciences (2004) also noted historic observations of the species. Yellow warblers are expected to occur in a regular distribution in the study area within suitable habitat based on observations within the TMV Planning Area.

Modeled habitat for the yellow warbler in the study area includes breeding/foraging habitat and secondary foraging habitat at all elevations (Appendix D). Modeled breeding/foraging habitat includes riparian scrub, riparian woodland, riparian/wetland, and wash. Modeled secondary foraging habitat includes non-riparian conifer and woodland. A total of 986 acres of modeled breeding/foraging habitat and 51,743 acres of modeled secondary foraging habitat for the yellow warbler was identified and mapped (Figure 3.1-23).

3.1.7.4 Invertebrates

Valley Elderberry Longhorn Beetle

Status and Distribution

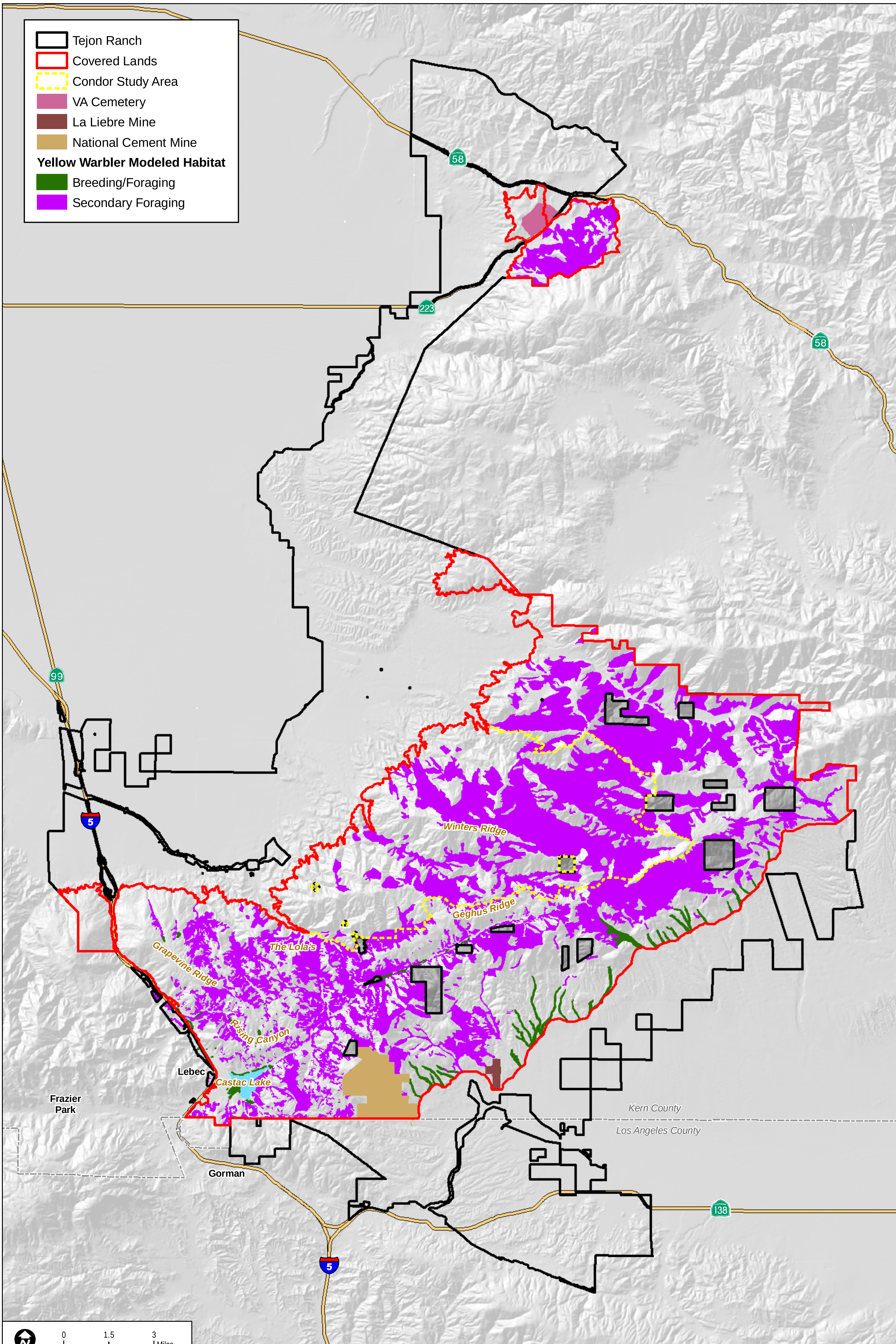
The valley elderberry longhorn beetle was federally listed by the Service as a threatened species in 1980, with critical habitat designated at two locations in Sacramento County (45 FR 52803) approximately 270 miles north of the study area. There are no critical habitat designations within or adjacent to the study area. A recovery plan was published by the Service in 1984 (U.S. Fish and Wildlife Service 1984b). On August 18, 2011, the Service published a 90-day finding to determine whether the valley elderberry longhorn beetle should be proposed for delisting (76 FR 51929-51931). The results of that finding are pending. This species has no state listing status.

The Central Valley of California comprises much of the range of the valley elderberry longhorn beetle, where it only occurs in association with red elderberry (*Sambuscus racemosa* var. *microbotrys*) and blue elderberry (*S. mexicana*) (Barr 1991, Collinge et al. 2001). The elderberry tree is generally associated with riparian forests that occur along rivers and streams in the Central Valley. Historically, the valley elderberry longhorn beetle was believed to have been restricted to an area of approximately 186 by 62 miles in the lower Sacramento and upper San Joaquin Valleys (Collinge et al. 2001). At the time of its listing in 1980, the valley elderberry longhorn beetle was known from less than 10 locations (U.S. Fish and Wildlife Service 2007b). Subsequent survey efforts determined that the species occurred in isolated and scattered localities from Redding in Shasta County south to the Bakersfield area. At present, there are approximately 190 records for valley elderberry longhorn beetles in its current range, which includes the Central Valley and watercourses that drain into the Central Valley up to approximately 3,000 feet. The proliferation in the number of records is primarily due to increased survey efforts rather than an increase in the species' distribution (U.S. Fish and Wildlife Service 2006). The CNDDB records for the valley elderberry longhorn beetle nearest the study area are in Caliente Creek on the northeast edge of the Tehachapi Mountains, approximately 35 miles north-northeast of the study area (California Department of Fish and Game 2011).

Habitat Characteristics and Use

All life stages of the valley elderberry longhorn beetle (except dispersal) are associated with its host plant, elderberry (Barr 1991, Talley et al. 2007). Elderberry trees and shrubs that support valley elderberry longhorn beetle populations occur in a variety of habitat types, but most frequently in riparian or elderberry savannah habitats (Barr 1991). Two species of elderberry serve as host for the beetle: blue elderberry and red elderberry (Talley et al. 2007). Elderberry grows in association with a number of woody plants, including Fremont cottonwood, western sycamore, willow, oak (*Quercus* spp.), box elder (*Acer negundo*), Oregon ash (*Fraxinus latifolia*), wild grape (*Vitis californica*), and poison oak (*Rhus diversiloba*) (Barr 1991, Collinge et al. 2001).

Because the species spends the majority of its existence burrowed inside of elderberry shrub limbs, the valley elderberry longhorn beetle is very difficult to detect or confirm presence or absence. Indications of presence have been recorded on all ages, sizes, and growth forms of elderberry, but emergence holes are the most commonly used feature to assume the potential for presence.



SOURCE: TRC 2007

FIGURE 3.1-23

Yellow Warbler Modeled Habitat

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Emergence holes are more frequently detected in older, larger, and healthier plants (Collinge et al. 2001). Barr (1991) also reported that valley elderberry longhorn beetles were more likely to occur in areas where individual elderberry plants were in close proximity to each other (Collinge et al. 2001). Plants showing signs of valley elderberry longhorn beetle presence usually show evidence of utilization for a number of years (Barr 1991).

Occurrence in the Study Area

Elderberry shrubs were found and mapped at several locations within the TMV Planning Area in 2005 and 2007, including around the perimeter of Castac Lake and watersheds that drain into the Central Valley. All shrubs were examined for emergence holes including those with one or more stem(s) measuring 1 inch or greater in diameter at ground level within the survey area (stem sizes most likely to provide host habitat for the beetle) (Appendix E). No emergence holes were found on any elderberry shrub (Dudek 2009).

Modeled habitat for the valley elderberry longhorn beetle in the study area includes conifer, savannah, and woodland vegetation types within 300 feet of blueline streams at elevations between 1,900 feet and 3,000 feet amsl (Appendix D). More general vegetation communities were used in the habitat model because specific mapping of elderberry shrub vegetation in the study area was not available. The vegetation communities are those within which elderberry would be expected to occur. A total of 2,597 acres of modeled habitat for the valley elderberry longhorn beetle was identified and mapped (Figure 3.1-24). However, because elderberry shrubs examined during surveys of the TMV Planning Area did not indicate the presence of emergence holes, and because the study area is at the upper elevation and extreme southern edge of the documented range of this species, the valley elderberry longhorn beetle is considered to have a low potential to occur in the study area.

3.1.7.5 Mammals

Ringtail

Status and Distribution

The ringtail is not federally listed but is a state fully protected species (California Department of Fish and Game 2011). This species occurs in the southwestern United States, in the states of Oregon, California, Nevada, Utah, Colorado, Kansas, Arizona, New Mexico, Oklahoma, and Texas. The ringtail is widely distributed in California, where it is a common to uncommon permanent resident. Its range includes most of California, with the exception of the extreme northeast corner of the state and southern portions of the San Joaquin Valley (California Department of Fish and Game 2005). Orloff (1988) extended the range of the ringtail to include the Mojave and Colorado Deserts, Sacramento Valley, northern portions of the San Joaquin Valley, northern Mono County, the high Sierra Nevada south of Lake Tahoe, and northeastern portions of the state. Belluomini (1980) conducted a review of the ringtail in California based on sighting records, museum specimens, and the current scientific literature, resulting in 446 occurrence records in 49 counties in California. The species was only absent from Modoc Plateau, Antelope Valley, and portions of the San Joaquin Valley. Abundance was highest along riparian areas in northern California and was most scarce in the Mojave and Colorado Deserts, the east slope of the Sierra Nevada, the San Joaquin Valley, and northeastern California (Belluomini 1980).

Habitat Characteristics and Use

The ringtail lives in a variety of habitats within its range, but has a strong preference for rocky areas, such as rock piles, stone fences, canyon walls, and talus slopes (Davis and Schmidly 2007). Suitable habitat for the ringtail consists of various riparian habitats, which provide increased availability of food supply and a mixture of forest and shrubland in close proximity to rocky areas and water resources (California Department of Fish and Game 2005). The ringtail may occur in semiarid areas, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands, and montane conifer forests (Poglayen-Neuwall and Toweill 1988), but is rarely found farther than 0.6 mile from permanent water (California Department of Fish and Game 2005). The ringtail occurs at elevations of up to 9,500 feet amsl but is most common at elevations from sea level to 4,600 feet amsl (Poglayen-Neuwall and Toweill 1988).

The ringtail uses hollow trees, logs, snags, cavities in talus, and other rocky areas as cover and establishes nests in rock recesses, hollow trees, logs, snags, abandoned burrows, or woodrat nests (California Department of Fish and Game 2005).

Occurrence in the Study Area

A focused survey was conducted for the ringtail in 2007 in the TMV Planning Area using camera/scent stations (Appendix E). Potential ringtail scat was observed in the TMV Planning Area in 2006, but no photographs, samples, or descriptions were provided to validate the observation. Extensive camera/scent station surveys during 2007 in the TMV Planning Area were negative for presence of the ringtail (Dudek 2009).

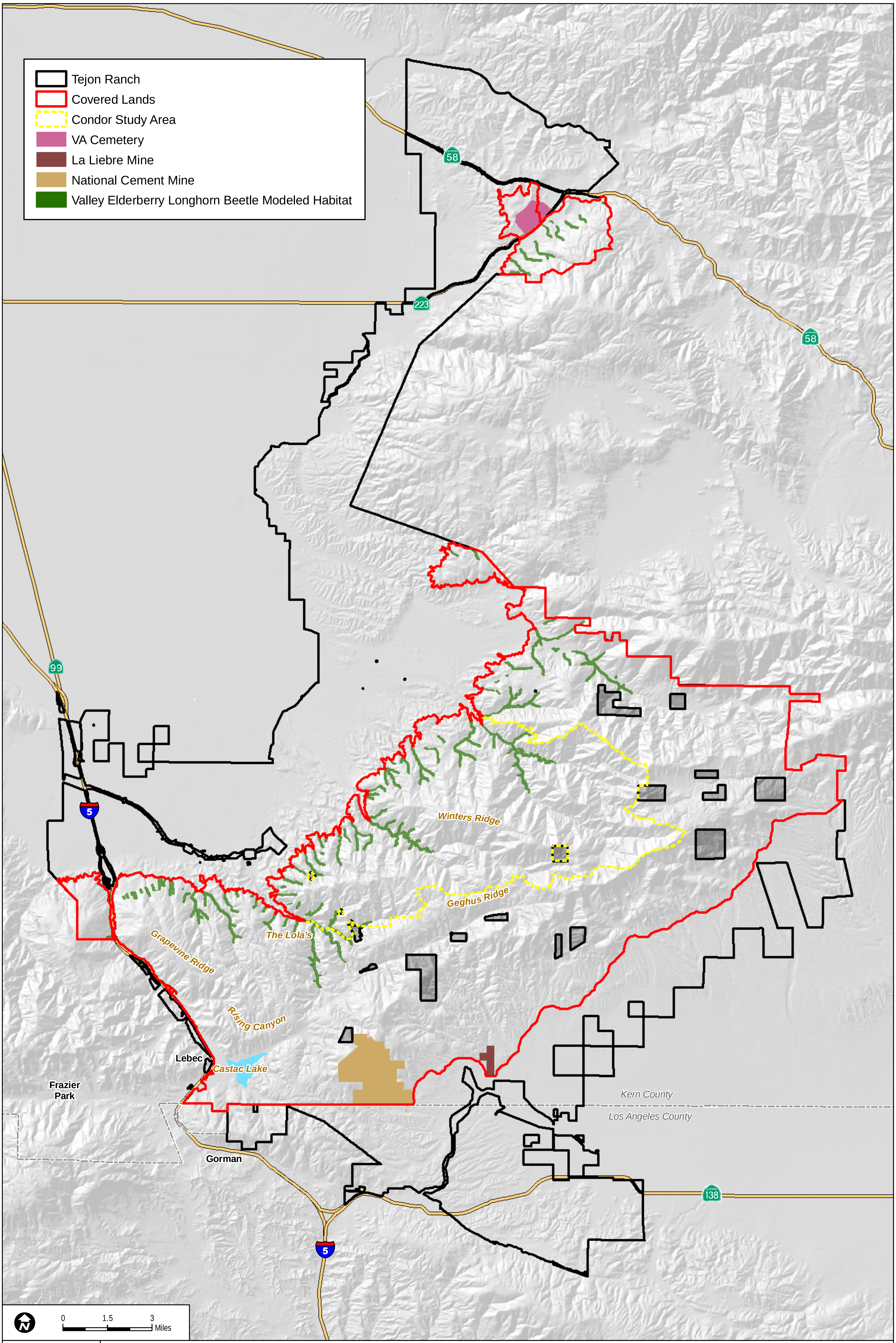
Modeled habitat in the study area for the ringtail includes riparian scrub, riparian woodland, riparian/wetland, wash, seeps, springs, and intermittent streams and a 1-kilometer (0.62 mile) buffer around these habitat types (Appendix D). A total of 99,253 acres of modeled ringtail habitat was identified and mapped in the study area (Figure 3.1-25).

Tehachapi Pocket Mouse

Status and Distribution

The Tehachapi pocket mouse is not federally listed but is a CDFG Species of Special Concern (California Department of Fish and Game 2011).

The Tehachapi pocket mouse is known from a few scattered localities in the Tehachapi Mountains, from Tehachapi Pass on the northeast to the area of Mt. Pinos on the southwest, and around Elizabeth, Hughes, and Quail Lakes on the southeast. It has been recorded between 3,500 and 6,000 feet amsl in elevation. The Tehachapi pocket mouse is considered very rare (California Department of Fish and Game 2005, Jameson and Peeters 2004). A survey of a number of historical Tehachapi pocket mouse locations in the 1980s failed to record any Tehachapi pocket mouse individuals (Laabs 2008). More recent mammal surveys on Tejon Ranch resulted in capture of five individual Tehachapi pocket mice in live traps in and adjacent to the southeastern portion of the study area (i.e., in the Bi-Centennial and Tri-Centennial conservation easement areas; Figure 2-4) (Cypher et al. 2010). A Tehachapi pocket mouse was also captured in Bronco Canyon in the Bi-Centennial area in 2001 (J. Patton pers. comm. *in* Cypher et. al. 2010 p. 12), and just west of the Bi-Centennial area in 2003 (California Natural Diversity Database 2010 *in* Cypher et. al. 2010).



SOURCE: TRC 2007

FIGURE 3.1-24

Valley Elderberry Longhorn Beetle Modeled Habitat

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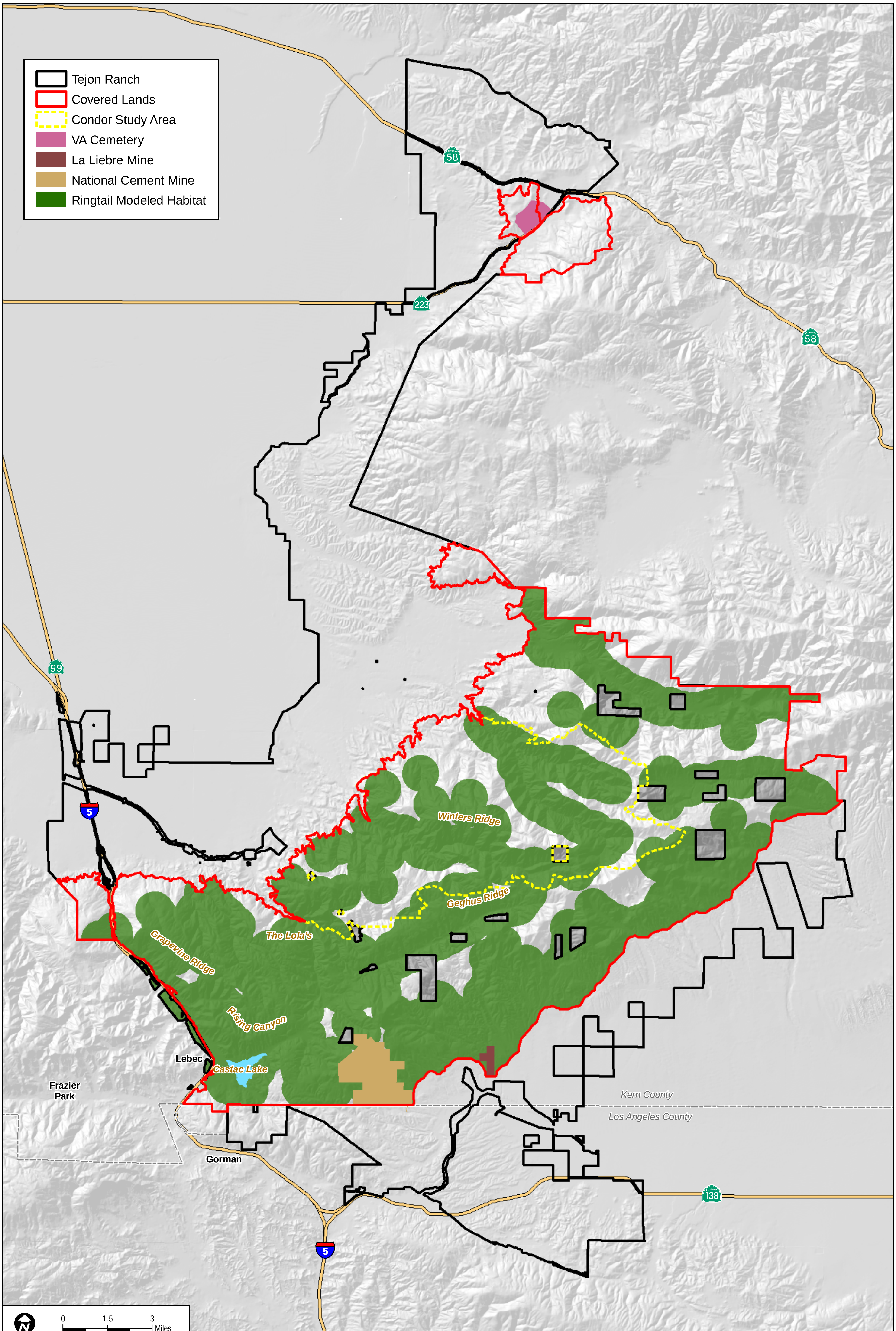

SOURCE: TRC 2007

FIGURE 3.1-25

Ringtail Modeled Habitat

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